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HIDALGO, MEXICO

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Reviews: Hidalgo, Mexico

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Foreword

OECD countries and regions are recovering from the effects of the global financial crisis. The recovery period provides an opportunity to rethink the foundations for inclusive and sustainable growth. For example, boosting economic productivity needs to go hand in hand with rising well-being for workers and citizens. This is also true for the Mexican state of Hidalgo. Since the global financial crisis and after a long period of economic stagnation, Hidalgo's economy started to close the gap with national standards in output and productivity. The state has undertaken a number of policy reforms to improve the business environment, attract foreign investment and modernise its public sector.

These gains should be further leveraged over the medium and long term to ensure Hidalgo mobilises its growth potential and can harness the benefits of globalisation. The state has a number of competitive advantages benefiting from a strategic location just north of Mexico City and a relatively safe environment (the third lowest homicide rate in the country). It also benefits from a comparatively good environmental quality within Mexico, low costs of production and a demographic premium in OECD comparison.

Yet the state must mitigate a number of bottlenecks it faces for development. They include a high labour informality rate, a high share of low-skilled labour force and underperforming cities. Moreover, low levels of tax collection and high socio-economic disparities between the south of the state, where the three metropolitan areas are located, and the municipalities in the northern and mountainous area remain pressing challenges.

The *Territorial Review of Hidalgo* examines the economic, social and environmental challenges the state faces. The review assesses the state's potential for further development and how its policies can be improved. The review highlights that Hidalgo has growth potential and untapped opportunities to transition towards high-value-added economic sectors that can generate quality employment by better linking its local businesses with global value chains and international firms. In order to attain sustained growth over the medium term, it must raise its productivity by developing a co-ordinated strategy to support small and medium-sized enterprises (SMEs) and a holistic innovation policy framework that can better integrate the activities of the academic, private and public sectors.

This review also identifies a number of recommendations to promote inclusive growth and reduce the north-south divide. These include development of a long-term strategy for business development in rural areas through the modernisation of agriculture and the promotion of off-farm activities. To raise well-being in rural areas, strategic spending from both the state and municipal governments linked to investment projects and in coherence with the development plan will be required. Improving accessibility to public services and expanding information technologies and the infrastructure connectivity, especially for the northern municipalities, is a cornerstone to ensure that the entire population participates in the state's economic development. The implementation of these

recommendations will help Hidalgo to maximise its contribution to the national economy and well-being.

This review is part of a series of OECD Territorial Reviews created in 2001 to support regional development at the multi-country, country, regional and metropolitan scale. It was approved by the Working Party on Rural Policy of the Regional Development Policy Committee [CFE/RDPC/RUR(2018)6] at its 21st session on 6 November 2018.

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Acronyms and Abbreviations

BANOBRAS	National Bank of Public Works and Services *Banco Nacional de Obras y Servicios Públicos*
CMR	Regulatory Improvement Commission *Comisión de Mejora Regulatoria*
CONAGO	National Conference of Governors *Conferencia Nacional de Gobernadores*
CONAMER	National Commission on Regulatory Improvement *Comisión Nacional de Mejora Regulatoria*
CONAPO	National Population Council *Consejo Nacional de Población*
CONEVAL	National Council for the Evaluation of Social Development Policy *Consejo Nacional de Evaluación de la Política de Desarrollo Social*
FGP	General Participation Fund *Fondo General de Participaciones*
FUA	Functional urban area
GDP	Gross domestic product
INEGI	National Institute of Statistics and Geography *Instituto Nacional de Estadística Geografía e Informática*
INAFED	National Institute for Federalism and Municipal Development *Instituto Nacional de Federalismo y Desarrollo Municipal*
LMR	Regulatory Improvement Law for the State of Hidalgo *Ley de Mejora Regulatoria del Estado de Hidalgo*
SEDAGRO	Secretary for Agriculture and Livestock Development of Hidalgo *Secretaría de Desarrollo Agropecuario de Hidalgo*
SEDECO	Secretary of Economic Development of Hidalgo *Secretaría de Desarrollo Económico de Hidalgo*
SEMOT	Secretary of Transport and Mobility of Hidalgo *Secretaría de Transporte y Movilidad de Hidalgo*
SOPOT	Secretary of Public Works and Territorial Planning of Hidalgo *Secretaría de Obras Publicas y Planeación Territorial de Hidalgo*
SEMARNAT	Secretary of Environment and Natural Resources of Hidalgo *Secretaría de Ambiente y recursos Naturales de Hidalgo*
SDP	State Development Plan of the State of Hidalgo *Plan de Desarrollo Estatal del Estado de Hidalgo*

Executive summary

Hidalgo must better mobilise its assets and overcome some important bottlenecks to accelerate economic growth and fulfil its growth potential

The state of Hidalgo has long experienced economic stagnation, yet since the aftermath of the global financial crisis, its economy has performed better than the average of Mexican states. During the 2009-16 period, the growth of the per capita gross domestic product (GDP) in Hidalgo (3.7%) exceeded the country average (2.1%). Its productivity growth (3%) was the sixth highest in the country over the 2010-15 period. Foreign direct investment (FDI) also appears to be surging over the last years, with a relatively greater diversity in foreign sources than at the national level.

Hidalgo has a strong growth potential given its strategic location – just north of the state of Mexico and in close proximity to Mexico City –, its rapid urbanisation and a higher share of manufacturing activities (20.6% of gross value-added [GVA]) than the national average (16.1%). The state also benefits from a youth demographic premium with a much higher share of the population that is youth (28.0%) than the average of OECD TL2 regions (17.9%).

Despite the recent trend of convergence to the Mexico average, a big challenge for the state is to accelerate this process and raise its income and productivity growth. Hidalgo's productivity level is at 40% of the median of OECD regions and ranks as the 12th lowest among Mexican states and in the bottom 5% across OECD regions (2014). To address this challenge, Hidalgo needs to overcome some important bottlenecks. These include improving the performance of cities to help increase well-being and service sector productivity, making the most of tradable activities by linking FDI projects with the local economy and updating and developing territorial and ecological plans to improve the business environment. Moreover, reducing the share of informality (73.8%, the fourth largest in the country) and improving the skills of its labour force are pressing challenges for the state.

Sustained growth over the medium term will require improvements in the enabling factors to raise income standards and well-being, notably the state's level of human capital and capacity to innovate

Hidalgo has a number of competitive advantages, beyond its strategic location. It is one of the safest states in Mexico (the third lowest homicide rate in the country) and has a relatively good environmental quality and low logistical costs. The current government is aiming to make Hidalgo more dynamic and attractive by improving its current business environment and modernising the public sector.

Nevertheless, to realise its potential, Hidalgo must address a number of enabling factors to increase productivity over the medium term, notably skills, accessibility and its capacity to innovate. Hidalgo lacks a holistic innovation policy, which reduces its

capacity to link academia, the government and the private sector. In turn, Hidalgo's innovation performance has declined over time (from 0.8 patents per million inhabitants in 2002 to 0.5 in 2015), in contrast with the average pattern of increasing patenting across Mexican states

Likewise, while the state of Hidalgo performs better in basic education than the national average (according to national evaluation scores), the quality of higher education is low by international standards (94th lowest amongst 133 regions according to OECD Programme for International Student Assessment [PISA] scores in mathematics). There also exists a mismatch between industry needs and the state's tertiary education institutions, with an over-representation of social sciences and an under-representation of computer science. Moreover, Internet connectivity and accessibility are major challenges to boost competitiveness in the state. Most of Hidalgo's households (67%) lack an Internet connection and nearly two- thirds of its road network is unpaved (62%), above the national average (53%).

To make growth in Hidalgo more inclusive, an integrated territorial approach is required to overcome its north-south divide and spread the benefits to all people throughout the state

There are important urban-rural divides within the state. Its three metropolitan areas, home to 36% of this population, concentrate almost half of economic establishments (48%) and a large proportion of total employment (42%) in the state. Yet, a large share of Hidalgo's population still lives in rural areas (46%). According to the 2016 OECD Regional Well-Being Framework, Hidalgo ranks below the average of Mexican states in life satisfaction, housing, access to services and income indicators, and its poverty rate (50.6%) is the ninth highest in the country. Rural areas have higher poverty rates, a larger share of labour informality and a higher concentration of primary activities. Extreme poverty in non-metropolitan areas reaches 13% of the population, far above the 3% in metropolitan areas (2015).

Low-density areas also face big challenges in their capacity to deliver public services. Young people in some localities in northern regions cannot access any school within a one-hour drive, while in southern localities, they can access up to 148 secondary schools within the same timeframe. About two in ten people in Hidalgo do not have access to a hospital within a one-hour drive.

There is hence a need to develop an integrated territorial approach with a long-term strategy for business development in rural areas and better-quality services that can lead to higher levels of well-being. For this, public spending of the state and its municipalities need to be better linked with investment projects and aligned with the development plan. Some remote municipalities have better accessibility to neighbouring states than to the south of Hidalgo. The state could hence benefit from better co-ordination with neighbouring states to improve the provision of public services and infrastructure. Effective co-ordination with the federal government will also be important to unleash the economic potential of the state. Given the uneven distribution of Hidalgo's economic activity, the economic plan should emphasise a place-based approach in order to reduce the current territorial divide.

Key recommendations

Reduce informality, improve skills, link local business with FDI projects and enhance the performance of cities to accelerate economic convergence

Strategies to support this recommendation should:

- Include the reduction of informality as a priority objective in the State Development Plan, focusing on the reforms that can be taken at the state level. It includes reducing labour informality in the public sector at the state and municipal level and promoting better co-ordination with municipal and federal governments.
- Develop programmes of vocational training, language and information technology (IT) training for the working age population to improve their employability.
- Improve the performance of cities to raise the quality of life and productivity. For this, the creation of a Metropolitan Planning Institute and the improvement of co-ordination in urban governance are instrumental.
- Improve the links of SMEs with new FDI investments and global value chains by creating a more strategic vision to integrate local programmes with funding and leveraging on the National Entrepreneur Fund.
- Update and develop territorial and ecological plans to improve the business environment and attain sustainable growth.

Improve the enabling factors to boost productivity and achieve sustained growth in the medium and long term

Strategies to support this recommendation should:

- Establish a co-ordinated innovation policy that goes beyond science and technology, and links government and academia to business needs.
- Create a co-ordinated mechanism to support SMEs by better aligning federal programmes on SMEs with those at the state level.
- Improve the accessibility to public services and the infrastructure connectivity with internal and external markets through the use of technology and co-operation with neighbouring states municipalities and the federal government.

Develop an integrated territorial approach with a stronger public governance and a more efficient fiscal collection and public investment to reinforce efforts for inclusive growth

Strategies to support this recommendation should:

- Improve the State Development Plan and its implementation by aligning budget allocations with objectives and promoting shared responsibilities among state secretaries. It should prioritise objectives and improve the monitoring mechanism. In rural areas, it should promote the modernisation of agriculture and off-farm activities.
- Improve the collection of own financial resources and the efficiency of public investment and transfers, for both the state government and municipalities.
- Strengthen governance and co-ordination mechanisms between levels of government and promote inter-state collaboration to attain joint projects on infrastructure or public service delivery with neighbouring states (e.g. Mexico or Veracruz).

Assessment and recommendations

Assessment

Hidalgo's economic performance is improving but it needs to accelerate

Hidalgo's economy is closing up the gap with national standards but income and productivity remain low

Hidalgo's economy is growing faster than the national average. Between 2003 and 2015, Hidalgo's gross domestic product (GDP) per capita grew (2.4% annual average) above the national average (1.1%). The growth rate of labour productivity (gross value added [GVA] per worker) (3%, 2010-15) was the 6th highest amongst Mexican states and in line with the comparison group of OECD regions. FDI has also grown in the last years with a relatively lower reliance on US investment (23% of FDI between 2008 and 2017) than the national level (43%). Nevertheless, Hidalgo's productivity level is at 40% of the median of OECD regions and it ranks as the 12th lowest among Mexican states and in the bottom 5% across OECD regions (2014). In 2015, the state contributed to only 1% of Mexico's national GVA and generated 1.6% of national employment; while accounting for 2.4% of the country's total population and 2,2% of its working age population.

Hidalgo's economy is slightly less concentrated on tradable activities (35.7% of GVA) than the national average (37.7%). Manufacturing activities account for most of the tradable sector in Hidalgo (58% of tradable activities), while other tradable sectors such as financial services or information are less prominent as value-added activities. Overall, Hidalgo's economic structure has a higher share of manufacturing activities (20.6% of GVA) than the national average (16.1%). The largest contributor to manufacturing in the state is, however, the subsector of production and refinery of petroleum (43%), which not only lacks the capacity for job creation but is concentrated in very few companies.

Hidalgo has hence untapped opportunities to increase its transition towards tradable and productive activities in the service sector such as information or logistics. The state can further move up in the global value chains by better linking its local business with the new international firms.

Hidalgo has a large stock of young, working-age population, albeit low-skilled and experiencing high labour informality

The population structure of Hidalgo ensures a relatively large stock of working-age population (65%). The elderly dependency ratio (population over 65 divided by the working age population) stands at 10.9% (2015), far below the average of OECD regions (14.8%). Likewise, the share of the young population (under 15 years old) in Hidalgo (28% in 2016) is higher than the Mexican average (27.3%) and far above the OECD average (17.9%). The large share of the working-age population translates into opportunities for utilising human capital in production.

Nevertheless, Hidalgo needs to increase the levels of educational attainment among its working-age population. Most of its labour force has only elementary education (60%) and its share of labour force with secondary and tertiary education (39%) is lower than the average of Mexican states (46%) and far below the benchmark of OECD regions (74%).

In addition, labour informality in Hidalgo is high for national and Latin American standards and has not significantly decreased in the past decade. Hidalgo's informality rate (73.8%) is the 4th largest in Mexico (average 57.2%) and higher than the average rate across Latin American countries (47%). The informality gap with the national average (16.6 percentage points) has not significantly improved since 2005. Young, less educated individuals living in low-density municipalities have a higher probability of being informally employed. While the agriculture and construction sectors experience the highest share of informal to formal workers, businesses, institutions and government sector present an important concentration of informal workers (20.8%).

The state is experiencing a rapid urbanisation in the south, but the lack of policy co-ordination across sectors and levels of government is hampering the performance of cities

Hidalgo's urban population has been growing faster (2.7% annual average between 1990 and 2015) than the average in Mexico (2%) and Latin American countries (1.9%). Hidalgo's proximity with Mexico City along with its topographic characteristics has led the people's agglomeration around mainly three urban poles in the south (Pachuca, Tulancingo and Tula).

The urbanisation process, however, has followed a low-density urban growth with high sprawl. During 2000 and 2015, Pachuca registered the fastest growth of built-up area (43%) among Mexican (23%) and OECD metropolitan areas (15%). In turn, by 2015 Pachuca's population density (406 inhabitants/km²) ranked below the average of Mexican metropolitan areas (640). For the same period, 43% of inhabitants of Pachuca lived in the urban core, far below the average of both Mexican metropolitan areas (84%) and OECD metropolitan areas (70%). Urban sprawl and low-density cities move population away from jobs and services, hampering urban attractiveness and reducing well-being (congestion, environmental costs and challenges for mobility and provision of public services).

Underdeveloped and outdated territorial and land use plans also threaten urban development. While Hidalgo's law framework acknowledges the importance of developing and updating territorial planning instruments, the law enforcement remains low. The state of Hidalgo still relies on an outdated urban plan from 1979 and at the local level; just 7 out of 84 municipalities have conducted an urban development plan (2017). In addition, almost one-third of municipalities (26) are not covered by an ecological management plan and just one-fifth of municipalities have updated their cadastres.

The former problems underline the lack of co-ordination in urban governance. Urban projects are often conducted without following environmental guidelines (e.g. half of housing projects between 2001 and 2016 did not have an environmental impact assessment). Additionally, urban areas in Hidalgo need a comprehensive urban policy that works hand in hand with other strategic sectors and across different state secretaries (e.g. between the Secretary of Transport and Mobility and the Secretary of Public Works and Territorial Planning) as well as municipal governments.

Hidalgo should focus on improving the enabling factors to maintain a sustained growth over the long term

Hidalgo's geographic location, safety and environment are competitive advantages for the state

The location of Hidalgo, in close proximity to the national capital, represents an important opportunity to benefit from agglomeration effects. Hidalgo is located in the centre-east of the country, just north the state of Mexico and in close proximity to Mexico City. Its capital Pachuca is less than 100 km distance from the heart of Valle de Mexico Metropolitan Area. This position and the location within Mexico's main north-south road and rail axes allows for logistical savings relative to more peripheral, less connected states.

Hidalgo has been able to preserve its environmental and security conditions, despite such proximity to the biggest Mexican city. Hidalgo's environmental quality remains relatively high, experiencing a lower level of air pollution (14.8 µg/m³) than the average of states in the centre of the country (16 µg/m³, in average). Additionally, the state benefits from a safe environment that makes it attractive for people and business. Hidalgo's homicide rate in 2015 was the 3rd lowest in the country (8 homicides per 1 000 people) and it ranked 4th across Mexican states in terms of security perception.

To make the most of these advantages and raise productivity and well-being over the medium term, the state needs to improve key enabling factors

The new economic plan of the state aims to make Hidalgo more dynamic and attractive for carrying out business. This strategy is based on improving the current business environment, promoting new local and foreign investment and supporting innovation in specific strategic sectors. It has also undertaken modernisation of the public sector (lean management, decreasing red tape and implementing a one-stop shop for investors) as well as improvement in the conditions for public-private partnerships, clusters and special economic zones. Some positive results are already visible, particularly with respect to the attraction of new foreign firms.

Nevertheless, Hidalgo's economic plan can better link the competitive advantages with local realities. It also requires further clarification on how to produce complementarities among the new FDI projects, the existing socio-economic and the institutional conditions of the territory. Hence, the state needs to focus on improving key enabling factors, notably skills, accessibility and its capacity to innovate.

The state faces challenges in education and the level of innovation

While the state of Hidalgo performs better in basic education than the national average (according to the national evaluation PLANEA), Hidalgo's quality of higher education is low. Hidalgo occupies the 94th position amongst 133 regions worldwide and the 20th in the country in terms of the share of students with the lowest PISA scores in mathematics. Additionally, there is an over-representation of social sciences and underrepresentation of computer science (4%), agronomy (2.4%) and services (1%) in the current curriculum of tertiary education, which underlines the mismatch between academia and the needs of the local industry and the new FDI investment.

Hidalgo is lacking a holistic innovation policy that goes beyond science and technology and sets strategic priorities. The innovation performance of Hidalgo in the national and international context is relatively poor and has not improved over time. The number of patents per million inhabitants in Hidalgo was 0.5 in 2015 falling from the 0.8 in 2002,

while the average of Mexican states increased from 1.2 in 2002 to 2.8 patents per million inhabitants. In addition to this, while Hidalgo has designed policies to support the whole life cycle of local SMEs and entrepreneurship, the programmes to support SMEs are scattered and require better linkages with FDI projects and global value chains (GVCs).

There are large gaps in accessibility to services and information and communications technology (ICT) infrastructure, especially for northern areas

While the south part of Hidalgo is well connected through physical infrastructure, northern municipalities lack paved roads and rail connections. Overall, most of the state's road network is unpaved (62%), above the average figure for Mexican states (53%). There is also a stock of more than 500 km of roads frequently affected by floods, which represents as a major problem in preserving good quality infrastructure.

The state faces great challenges in access and provision of services. In 2017, 67% of households in Hidalgo lacked an Internet connection, a higher percentage than the national average (49.1%). On top of that, about six out of ten households in the state reported not having a computer at home. 18% of the population does not have access to a hospital within a 1-hour drive and 53 263 people do not have access to a health facility within a 60-minute car journey. In terms of education, young people in some localities in northern municipalities cannot access any school within a 1-hour drive, while young people in localities with high access can access up to 148 secondary schools within a 1-hour drive.

Hidalgo faces challenges on well-being and inequalities powered by a large north-south divide

A strong north-south territorial divide feed the socio-economic disparities in the state

Recent economic gains are not evenly distributed across the territory. The south of the state, where the three metropolitan areas are located, concentrates most of the economic activity and jobs in Hidalgo. The biggest share of the employed population (42%) and economic activity (48% of economic establishments) are concentrated in the south of the state, where the 3 metropolitan areas are located (Pachuca, Tulancingo and Tula). In contrasts, many municipalities in the north of the state have only a marginal engagement in the economy, with total output per head below one- fifth of the value of the best performing municipality (Tepeapulco in the south). The municipalities in the north do not have direct access to the ports in the Gulf, with a higher share of unpaved roads and a deficient road connection with the south of the state. Overall, the population in the northwest municipalities require on average more than 2 hours to reach a city, far above the 30-60 minute journey in southern municipalities or the ones bordering other states (e.g. Veracruz).

Hidalgo ranks below all dimensions of well-being except one (jobs) when compared to OECD regions. According to the 11 dimensions measured in the 2016 *OECD Regional Well-Being Framework*, the largest gaps in Hidalgo appear in education, access to services, income and housing, which in turn are larger in the north of the state. With half of its population in poverty, Hidalgo also has the ninth largest poverty rate across Mexican states. The north concentrates the municipalities with the highest poverty rates. Extreme poverty in non-metropolitan areas stands at 13% of the population, far above the 3% in metropolitan areas.

Rural policy mainly focuses on agriculture and relies on subsidies, with little consideration for complementarities among sectors or levels of government

Despite the ongoing rapid urbanisation, a large share of Hidalgo's population still lives in rural areas (46%) and most of the territory is classified as rural (97% of localities are rural areas). Rural areas in Hidalgo tend to have high poverty rates related to both social and income dimensions, low population density, high specialisation in primary production activities, high labour informality rates and a large share of indigenous people and elderly population. The 10 municipalities with the highest poverty rates in the state have an average of 45% of their working population in agriculture activities, above the agriculture share within the 10 municipalities with the lower poverty rates (7%).

Rural policy in Hidalgo mainly focuses on the agricultural sector, following an assistantship approach and lacking consideration for synergies with other sectors. The support provided to producers and farmers are unidirectional and based on subsidies and in-kind contributions.

There is a need to develop an integrated territorial approach with a long-term strategy for business development in rural areas. It involves developing policy complementarities for job creation not directly linked to agriculture. Natural amenities, cultural and gastronomic attractions are assets for growth that can benefit from alignment of environment, agriculture and tourism policies.

The state of Hidalgo has a low own revenue collection that limits its investment autonomy

Despite advancing on decentralisation in Mexico, states are still limited in their financial portfolio. There is a misalignment between responsibilities allocated to subnational governments and the resources available to them, and the Federal government still controlling large spending areas.

Hidalgo needs to increase its own income. The state has the fourth lowest level of own revenues collection in Mexico and its dependency on federal transfers (90% of the state income) is above the national average. The share of the state tax collection (2.8%) is below the country average (4.1%). Property taxes are especially low at the municipal level where the share of the land use tax (3%) is half the average of Mexican municipalities.

High informality rates, low institutional capacity at local level coupled with a small tax base and relatively low levels of tax rates and fees hamper the own fiscal revenues in the state. There is also a need to enforce development and update cadastres and public registry of property at the municipal level in order to boost property tax collection.

The low revenue collection generates a lack of accountability and low incentives for an effective fiscal policy. In 2016, Hidalgo ranked as the state with the sixth lowest level of public investment per capita in Mexico and the existing investments do not target the strategic sectors for the state. There is scope to increase the quality and level of public investment by promoting public-private partnerships as well as evaluating the cost-benefit of new funding mechanisms.

Hidalgo elaborated a comprehensive development plan but lacks complementarities and definition of long-term priorities

The State Development Plan's objectives are too broadly defined, with no clear prioritisation and differentiation between short, medium and long term. This leads to

weaker monitoring and refocusing of public policies. The strategic pillars also bear cross-cutting issues without promoting sharing responsibilities.

The monitoring and evaluation of the State Development Plan is made through a mechanism of indicator performance that lacks alignment with budget and presents various challenges:

- The indicators tend to duplicate across secretaries and their transversality and complementarity can be enhanced. This hampers the scope for vertical or horizontal co-ordination and reduces clarity over the attribution of responsibilities to each secretary and level of government.

- Performance indicators often reflect outputs rather than outcomes. Indicators should then measure the specific objectives (outcomes) that the government wants to achieve.

- Indicators lack a clear criterion on fulfilling objectives based on a benchmark with comparable regions, past objectives, or a baseline value.

Additionally, the implementation of the state's economic plan is heavily reliant on promoting the industrial activity in the south. As Hidalgo is faced with a highly imbalanced distribution of its economic activity, the implementation of the plan should be accompanied with a place-based approach and a social plan to reduce such a divide.

The Law on Regulatory Improvement is a step forward in improving the business climate in the state but can be further improved

The State of Hidalgo developed a Law on Regulatory Improvement that seeks to improve regulatory quality and is consistent with many of the practices adopted by OECD countries. However, it is still missing the elaboration of the subordinating regulation – El Reglamento –, the instruments to analyse draft regulation and more clarity on the set up of the State Commission on Regulatory Improvement.

The main efforts of Hidalgo on regulatory improvement focus on administrative simplification, with more than 700 processes to be simplified and digitalised. However, it requires developing an overarching policy on administrative simplification to articulate the several current individual efforts by better integrating it with the one-stop shop and reducing administrative burdens. Alongside this, the institutional co-ordination between ministries and agencies with the current office in charge of regulatory improvement needs to be strengthened.

Key recommendations

1. Accelerating Hidalgo's economic convergence	
1. Reducing informality in the state	Informality is multidimensional and should be addressed by different levels of government. While it has a structural dimension, there are some aspects that can be addressed by the state government such as: i. Increase participation in tertiary education and move people away from subsistence agriculture. ii. Decrease labour informality in the public sector at the state and municipal level. iii. Include the reduction of informality as a priority objective in the State Development Plan. This should involve a horizontal performance indicator to co-ordinate the different secretaries towards this goal.
2. Promote training programmes for the workforce	i. Create new programmes of vocational training, language and IT training for the working-age population. ii. Improve and create new programmes to retrain existing and past entrepreneurs. This should involve awareness and mentorship led by the Hidalgo's Institute for Entrepreneurial Competitiveness. iii. Facilitate the entry of women into the labour force by supporting woman-led business (beyond credits).
3. Improve the performance of cities to raise the quality of life and service sector productivity	If well planned and managed, urban agglomerations are key drivers to improve well-being and service sector productivity. The following actions would help: i. Create an integrated urban development policy that works hand in hand with other strategic sectors and across different state secretaries. It should include a clear mandate for the Secretary of Mobility and Transport (SEMOT) and the Secretary of Public Works and Territorial Planning to co-ordinate urban policies and reduce urban sprawl. ii. Establish a Metropolitan Planning Institute that can lead the elaboration of the metropolitan plan. It should also improve the co-ordination of urban policies among metropolitan areas and across the level of governments. iii. Update urban and land use plans for all municipalities inside the three metropolitan areas. The Metropolitan Commission along with Secretary of Public Works and Territorial Planning should be instrumental in attaining this goal.
4. Update and develop territorial and ecological plans to improve the business environment and attain sustainable growth	i. Provide technical assistance and financial support to municipalities outside metropolitan areas to prepare urban and ecological development plans and update cadastres. ii. Prioritise partnerships with the poorest municipalities to ensure the implementation and enforcement of the land use plans. iii. Involve the society to advise and control the development and update of territorial and environmental plans. iv. Improve the coverage of digitalisation of urban plans and exchange of digital information about cadastres.
5. Strengthen linkages between local business and new foreign direct investments (FDI)	i. Use the National Entrepreneur Fund as a vehicle to link local SMEs into global value chains. This can support quality accreditation, technological upgrades, and events organisation to connect transnational companies and local companies. ii. Adapt training programmes to match local skills with the demand created by new FDI. iii. Develop a strategic vision based on the economic plan that integrates funding for SMEs, local incubator programmes and new FDI. Local funding networks should also be integrated with federal schemes.

2. Improving enabling factors to boost productivity	
6. Establish a co-ordinated policy on innovation by linking government and academia to current and future business needs	i. Create an institutional framework to formalise the link between higher education institutions, the private sector and government.
	ii. Develop a holistic innovation strategy that fosters an open innovation ecosystem with knowledge creation, diffusion and exploitation.
	iii. Assign a governance body to co-ordinate and monitor the holistic innovation strategy, seeking a demand-led approach for innovation projects and skills.
	iv. Reduce the mismatch between the curriculum of the education system and the needs of the industry and labour market. For this, the state should adapt the curricula of public universities and enhance the coverage of the Dual Model of Academic Training.
	v. Create technical councils including school directors, professors and parents in order to decrease dropout rates.
7. Create a co-ordinated mechanism to support SMEs	i. Develop a mechanism to better align federal programmes and SMEs at the state level.
	ii. Improve programmes that target SMEs from the more disadvantaged groups and northern municipalities to ensure a higher participation in the economic activity of the state.
	iii. Create programmes to support internationalisation of local SMEs and entrepreneurs.
	iv. Strengthen the brand for the state of Hidalgo. The brand should be comprehensive and based on the characteristics and potential of the region.
8. Improve the accessibility to public services and the infrastructure connectivity with internal and external markets	i. Develop better connectivity of northern municipalities with neighbouring states that can facilitate access to the ports of the Gulf. This can be done through a partnership with neighbouring states.
	ii. Increase coverage and penetration of ICT infrastructure across the territory. These initiatives should be complemented with other programmes that improve the skills and capacity of local communities to make the most of broadband connectivity.
	iii. Increase accessibility to public services across the territory by consolidating them in areas of higher density and using technology and partnerships with other states to deliver them in remote areas.
	iv. Reduce the share of unpaved roads (currently 62%) to improve the connectivity of remote municipalities and accelerate the expansion of the road that connects Huejutla in the north with Pachuca.
3. Attaining inclusive growth through better governance	
9. Prioritise objectives in the State Development Plan (SDP), deliver integrated implementation and strengthen monitoring mechanism	i. Prioritise objectives of the state over the short, medium and long term and identify attainable strategies to implement them.
	ii. Implement multi-year or medium-term budgets to tighten the link between programming and spending and thus support the implementation of the SPD.
	iii. Create a co-ordination mechanism that can attain complementarities and shared responsibilities among secretaries. Special cabinets by areas or other forms of joint work can be implemented. The outcomes should be monitored through horizontal performance indicators.
	iv. Improve the monitoring mechanism by establishing a hierarchal structure with a selected number of outcome indicators and a lower level of output indicators.
	v. Strengthen co-ordination mechanisms for the social and economic programmes to build complementarities in the poorest areas.
	vi. Promote in rural areas the modernisation of agriculture and off-farm activities including tourism and other sectors that can provide formal jobs.

10. Improve the collection of own financial resources and the efficiency of investment and transfers	i. Expand the state tax base and audit rate levels of the payroll tax and water fees to ensure alignment with the quality of public services.
	ii. Assist the municipalities with the lowest institutional capacities in their efforts to collect the property taxes.
	iii. Establish mechanisms to incentivise joint spending among municipalities.
	iv. Develop a naming and shaming mechanism to encourage municipalities to increase own resources and link investments with strategic sectors.
	v. Seeks ways to increase the level and quality of public investment by promoting public-private partnerships as well as evaluating the cost-benefit of new funding sources.
	vi. Link budget allocation with strategic programmes of the SDP. Outcomes of performance indicators should be used to reassess future budget allocation.
	vii. Enforce updates of the cadastre and public registry of property at the municipal level in order to boost property tax.
11. Strengthen governance and co-ordination mechanisms as well as the capacity of public servants	i. State programmes and projects must include the creation of formal mechanisms for inter-sectorial co-operation. It can be done through joint authorities, special task forces or inter-secretary working group.
	ii. Replicate the model of the Water and Sewerage Commission of Intermunicipal Systems (CAASIM) for a co-ordinated delivery of public services among different municipalities. A regional commission of this type in northern municipalities can be beneficial to improve delivery of water, electricity and other public services.
	iii. Promote inter-state collaboration to attain joint projects with neighbouring states (e.g. Mexico or Veracruz). The co-operation initiative *south-south-eastern region* within CONAGO can guide Hidalgo in this process.
	iv. Implement strategies to transition towards a merit-based recruitment process for public sector workers. It involves revising the selection tests for public officials and the scope to increase the level of public spending on personal services.
	v. Use contracts between levels of government in order to align public investments and establish fiscal responsibilities.
12. Continue improving the regulatory policy in Hidalgo	i. Develop the norm ("Reglamento") of the State Law on Regulatory Improvement and create a state commission to oversee the implementation of regulatory improvement.
	ii. Prepare a work agenda with specific objectives and goals on regulatory improvement with municipalities in the short and long run, and make it public.
	iii. Revisit the strategy of the one-stop shop at state and municipal level in order to make it an effective tool to facilitate business opening by taking inspiration from international best practice.
	iv. Improve co-ordination between secretaries and the current office in charge of regulatory improvement. This can be done by appointing a representative from each public entity to follow up on the issues related to regulatory.

Chapter 1. Drivers of growth and challenges for regional development

This chapter assesses the economy of Hidalgo and serves as a basis for policy recommendations in the following chapters. The chapter contains five parts. The first part sets the scene by outlining the most influential national trends affecting the economy of Hidalgo. The second part assesses territorial inequalities and population dynamics by carefully identifying current and future demographic and concentration trends. The third part evaluates the economic structure and performance of Hidalgo against other Mexican regions, as well as a benchmark group of OECD regions with similar characteristics. The fourth part is devoted to analysing labour market structure and dynamics, with a strong emphasis on the informal labour market relying on individual-level and sectoral data. The last part makes a diagnosis in terms of poverty and well-being trends and identifies territorial inequalities in terms of access as a major factor affecting present and future levels of well-being in the state.

Introduction

Hidalgo is a resilient, growing and safe state with good access to large markets in Mexico. Hidalgo has the potential to develop further by addressing high levels of poverty and inequality with the right policy interventions. The assessment in this chapter will serve as a basis for policy recommendations in the following chapters. After setting the scene in terms of national trends affecting Hidalgo, the chapter continues with an assessment along four lines: territorial inequalities and population dynamics; economic structure and performance; labour market structure and dynamics; and poverty and well-being.

In terms of territorial inequalities and population dynamics, the assessment of this chapter indicates that the rural-urban transition in the state is not fully completed. The movement from rural to urban areas will continue in the upcoming years and will likely be concentrated around the three main existing urban centres. The current population structure ensures a healthy size of the labour force, although there is a pressing need for increasing skill and education levels to meet economic diversification away from low productivity sectors. A key point that policy interventions will have to address is the existing large socio-economic disparities within the state. A strong territorial divide, partly driven by geographic conditions, is likely to deepen in the upcoming years. Urban areas in the south concentrate most of the economic activity while distant municipalities have only a marginal engagement in the economy.

The assessment of the economic structure and performance in this chapter indicates that Hidalgo is a resilient state that has performed relatively well under adverse external conditions. The economic climate during the last decade, as well as the intense competition from other Mexican states, certainly influenced the current economic profile of the state, as evidenced by the comparison with eastern and Baltic OECD regions. The manufacturing sector is solid but currently lacks the capacity to create enough jobs to absorb excess supply in the labour market. Furthermore, the ongoing specialisation in low productivity services limits the room for productivity improvements. With active support to key sectors, Hidalgo has the potential to transition towards high-value-added economic sectors that can generate quality employment opportunities in the medium term.

As the analysis of the labour market in this chapter suggests, the most pressing challenge for Hidalgo is to create more and better jobs in the near future. Currently, the state faces deep labour market issues related to increasing precariousness and slow creation of stable formal employment across all sectors. High and persistent informality rates also co-exist with increasing precariousness in the formal sector. A significant earnings gap between comparable formal and informal workers indicates the need to mobilise informal workers to the formal sector in order to increase productivity and incomes. Sustained high levels of informality are indicative of broad structural issues of the national labour market outside the reach of local policymakers. However, the diversity of informal workers suggests the need for complementary policies at the local level that can tackle different segments of the informal sector.

The assessment of the current situation in terms of poverty and well-being clearly indicates that the most pressing need of the state is to lift a considerable share of the population out of poverty. Low incomes from agricultural and informal jobs are part of the explanation for high poverty rates, which are likely to persist in low-density areas with poor access to urban centres. The accessibility analyses of this chapter indicate that

current inequalities in access to basic services, especially education, need to be addressed to lower the risk of poverty for future generations.

National economic trends influencing the performance of Hidalgo

The year 2017 was challenging for the Mexican economy as uncertainty loomed regarding the Trump administration and NAFTA renegotiation. Inflation and interest rates spiked and investment decreased. However, current recovery trends indicate that the Mexican economy is able to respond to shocks. Although growth rates have been positive, Mexico has been unable to catch up with OECD countries and its productivity growth is among the lowest. Low levels of trust in the public administration evidence a challenging institutional framework, which are now half of the OECD average. An incoming administration in December 2018 will set new directions in terms of public investment priorities, the bilateral relation with the United States and the future of structural reforms.

Sluggish economic national growth has set the scene for Hidalgo's performance

The evolution of real gross domestic product (GDP) in Mexico follows the average trend in OECD countries. It showed sustained growth rates from 2003 to 2007, a large drop in 2009 due to the global financial crisis, a rebound in 2010 and a subsequent decline in growth rates (Figure 1.1). Growth has been resilient but sluggish and has been underpinned mainly by private consumption – despite its erosion by high inflation in 2017 – and manufacturing exports.

Figure 1.1. GDP growth, Mexico 2000-17
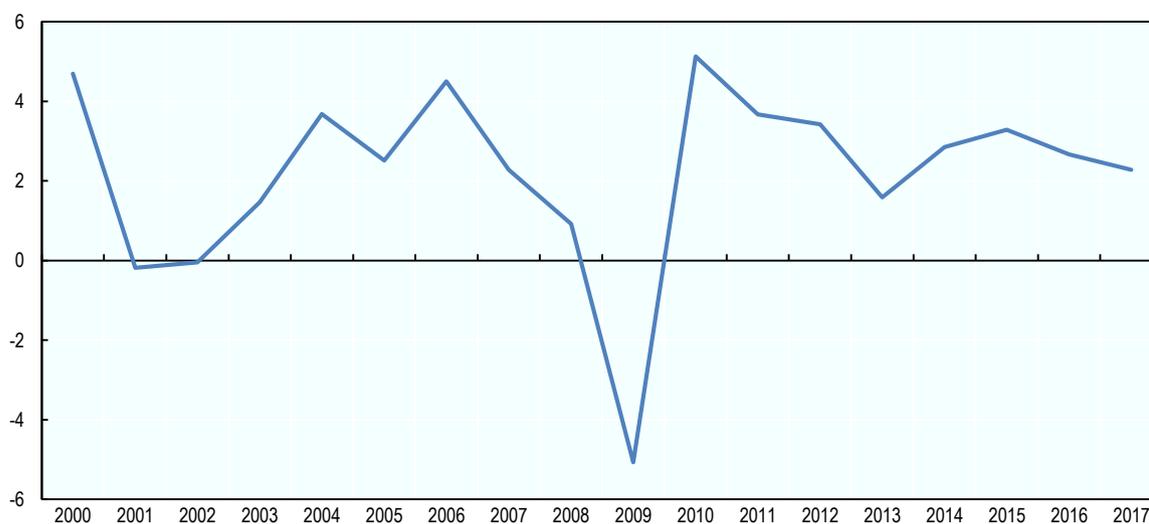
Source: OECD (2018[1]), *Economic Outlook 103 - May 2018*, https://stats.oecd.org/index.aspx?DataSetCode=EO.

Productivity in Mexico, measured as GDP per hour worked, increased slowly over the 2000-16 period. Mexico's productivity growth has recently picked up in sectors that benefitted from structural reforms: energy (electricity, oil and gas), financial and telecom (OECD, 2017[2]). Still, the gap with the OECD average has grown. The difference between labour productivity in Mexico and OECD countries rose from USD 24 in 2006 to almost USD 28 in 2016. Benchmarking productivity growth in Mexico with OECD

member countries in the 2000-16 period puts the Mexican economy at the bottom of the ranking, just above Chile.

Resilient policy environment under changing external conditions

Despite 2017 being a challenging year for the Mexican economy, inflationary levels are stabilising now. Mexico has managed to reduce inflation since 2000 (Figure 1.2). However, uncertainty regarding the Trump's administration policies – particularly the renegotiation of NAFTA – triggered an increase the interest rates that reached a historic high of MXN 22.04 per USD 1 in November 2016. In addition, the increase of gasoline prices caused a spike in inflation levels above the Central Bank's target of 3% ±1.

Figure 1.2. Inflation rate, Mexico, 2000-17
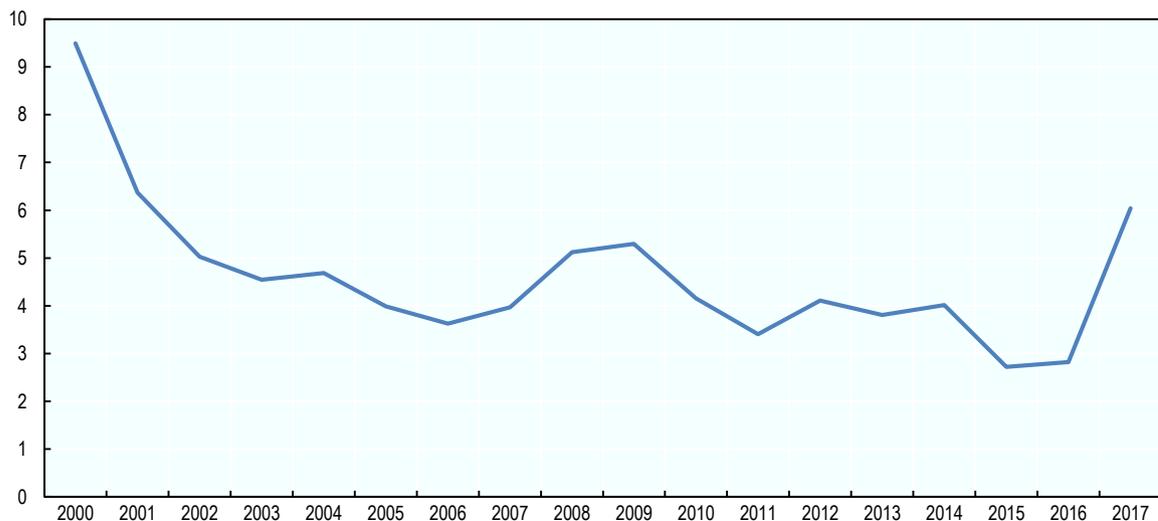
Note: Inflation is measured as changes in Consumer Price Index.
Source: OECD Statistics (2018[3]), *Inflation (CPI)*, https://data.oecd.org/price/inflation-cpi.htm.

The large depreciation of the Mexican Peso (MXN) further increases the competitiveness of Mexican non-oil exports and has not pushed up inflation. Structural reforms are supporting a low inflation environment and strong expansion of credit, leading to gains in real wages and employment. It also has a positive impact on the fiscal balances, reflecting the USD-denominated oil receipts and the low exposure to foreign currency debt (OECD, 2017[2]). The so-called "Trump effect" also had its toll on investment. It decreased due to high interest rates and uncertainty regarding the outcomes of NAFTA negotiations. Foreign direct investment (FDI) in Mexico decreased by 5.8% in 2016. FDI increased by 11% in 2017 and appears to be on track towards recovery.

Growth has not been inclusive enough to achieve better living conditions for many Mexican families, as inequalities persist throughout the country. Regional disparities between a highly productive modern economy in the north and in the centre and a low-productivity traditional economy in the south have increased. In addition, income inequality in Mexico is the highest among OECD countries according to the latest data. The OECD Gini coefficient average in 2014 reached 0.318, while Mexico's was 0.459.

Figure 1.3. Real exchange rate and total and non-oil exports, Mexico, 2000-18

Real exchange rate

Million USD
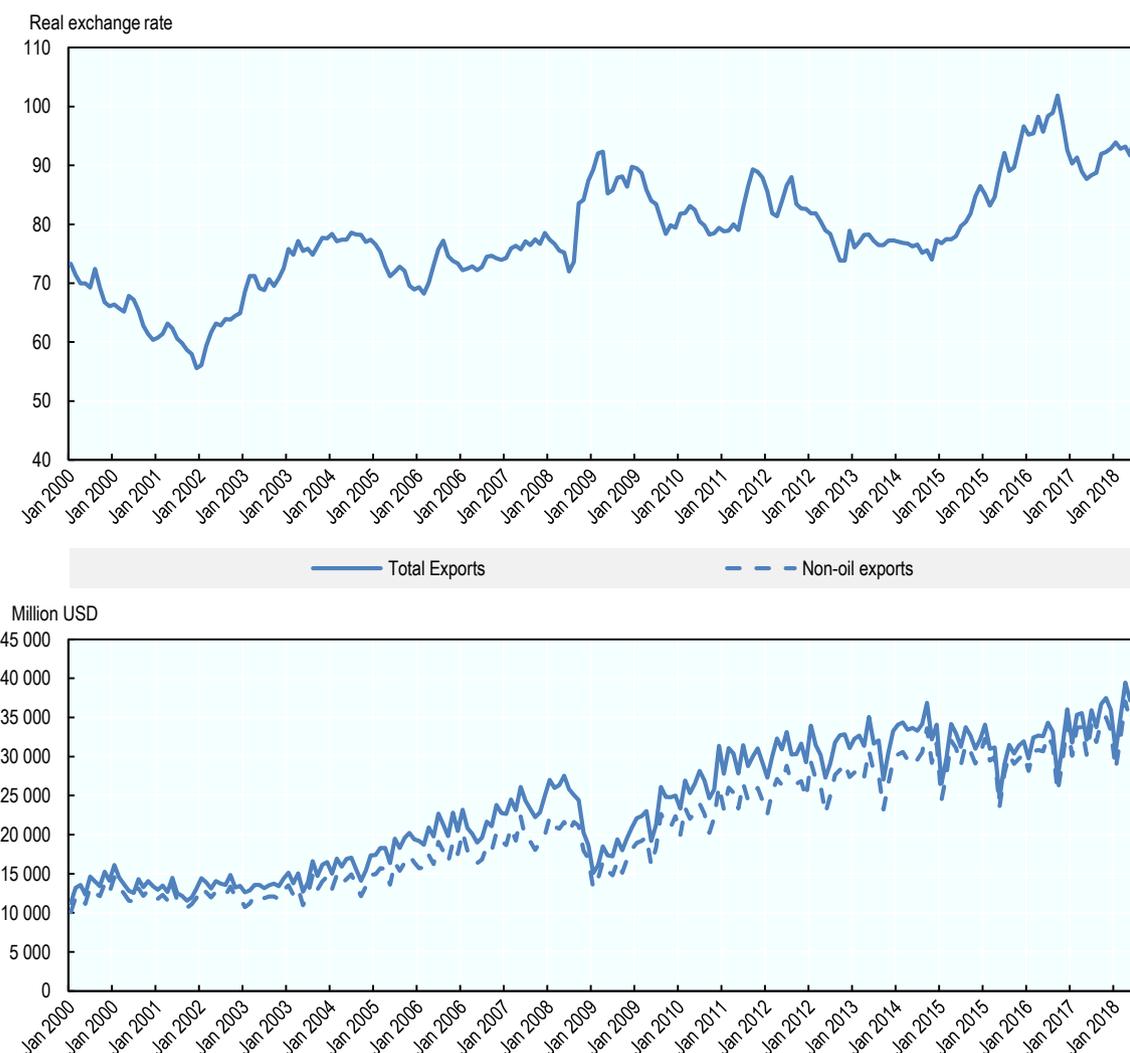
Sources: Banxico (2018[4]), *Índice del Tipo Real de Tasa de Cambio*, http://www.banxico.org.mx/SieInternet/ consultarDirectorioInternetAction.do?sector=6&accion=consultarCuadro&idCuadro=CR60&locale=es; Banxico (2018[5]), *Balanza Comercial*, http://www.banxico.org.mx/SieInternet/consultarDirectorioInternetAc tion.do?accion=consultarCuadro&idCuadro=CE125&sector=1&locale=es.

The state of territorial inequalities and population dynamics

Hidalgo, one of the 31 states and federal districts that compose Mexico, is located in the centre-east of the country. It borders Querétaro in the northwest, Veracruz in the northeast, San Luis Potosí in the north, Puebla in the southeast, Mexico in the southwest and Tlaxcala on the south. With a land area of 20 846 km² corresponding to 1.1% of the national land and a population of 2 858 359 inhabitants in 2015 corresponding to 2.4% of the national total, Hidalgo is one of the smallest states in Mexico (Figure 1.4). The state's population density is 137 inhabitants per km², more than double the national mean (61 inhabitants per km²) and less than half that of Mexico City, the Federal District and Morelos.

The administrative divisions of state following OECD regional typology (see Box 1.1) include 13 TL3 regions, out of which: 2 are Predominantly Urban (PU); 4 are Intermediate (IN); 3 are Predominantly Rural Close to a City (PRCC); and 4 are Predominantly Rural Remote (PRR). In terms of national administrative boundaries, Hidalgo is divided into 84 municipalities with population sizes ranging from 2 667 to 277 375 inhabitants, 5 121 rural localities (with populations of less than 2 500 inhabitants) and 239 urban localities (with populations of 2 500 and over).

Figure 1.4. Location and population by TL3 regions, Hidalgo, 2016
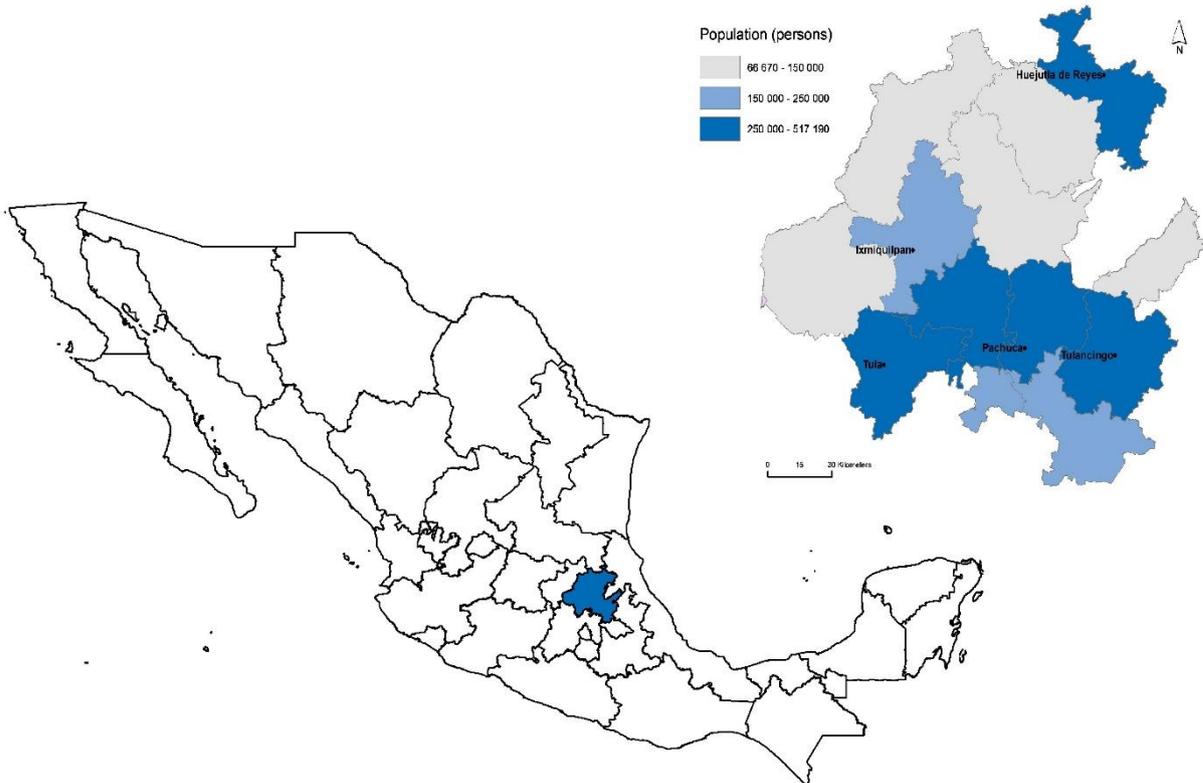
Note: Estimated population.
Sources: INEGI (2017[6]), *Marco Geoestadístico Nacional*; OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Box 1.1. The OECD TL3 regional typology

Defining and classifying TL3 regions

The OECD regional database collects and publishes regional data at two different geographical levels, namely large regions (Territorial Level 2, TL2) and small regions (Territorial Level 3, TL3). Both levels encompass entire national territories. With some exceptions, TL2 regions represent the first administrative tier of subnational government (i.e. states in the United States, *estados* in Mexico, or *régions* in France). TL3 regions are smaller territorial units that make-up each TL2 region.

The OECD urban-rural typology classifies TL3 regions as "predominantly urban", "intermediate" and "predominantly rural". This typology is based on three criteria:

1. Identify rural local areas[1] according to population density. A local area is defined as rural if its population density is below 150 inhabitants per km^2 (500 inhabitants for Japan and Korea to account for the fact that the national population density exceeds 300 inhabitants per km^2).

2. Classify regions according to the percentage of population living in rural local areas. A TL3 region is classified as predominantly rural if more than 50% of its population lives in rural local areas. TL2 regions are classified as predominantly urban if less than 15% of the population lives in rural local areas. If the share of the population in rural local areas is between 15% and 50%, it is categorised as intermediate.

3. Classify regions based on the size of the urban centres. Accordingly, a region classified as rural on the aforementioned basis becomes intermediate if it has an urban centre of more than 200 000 inhabitants (500 000 for Japan) representing no less than 25% of the regional population. A Tl3 region classified as intermediate on the aforementioned basis is classified as predominantly urban if it has an urban centre of more than 500 000 inhabitants (1 million for Japan) representing no less than 25% of the regional population.

The extended OECD typology developed in 2011 sub-divides rural TL3 regions further into 2 sub-categories: rural close to cities and rural remote by adding a distance criterion to urban centres according to a driving time threshold of 1 hour (45 minutes for North America) to the nearest population agglomeration of 50 000 inhabitants. Table 1.A.1 in Benchmarking HidalgoAnnex 1.A summarises the method.

In 2018, there were 389 TL2 and 2 251 TL3 regions across OECD countries.

Source: Brezzi, Dijkstra and Ruiz (2011[8]), "OECD Extended Regional Typology: The Economic Performance of Remote Rural Regions", http://dx.doi.org/10.1787/5kg6z83tw7f4-en.

Hidalgo has a relatively large stock of working-age population...

The population structure of Hidalgo currently ensures a relatively large stock of working-age population. The population pyramid of the state is wide at the bottom and gets smaller as age increases (Figure 1.5). As the percentage of the population outside working age is relatively small, the stock of human capital available in the economy is currently relatively large. The distribution of the population by gender and age groups in Hidalgo falls squarely into the national average.

In 2016, the percentage of the population in the broader youth, working-age and elderly categories (age ranges of 0 to 14, 15 to 64 (working age) and 65+ respectively) were 29%, 65% and 7% respectively, while for the OECD the respective shares were 18%, 66% and 18%. Compared to the national average, the only notable difference was a slightly lower share in the 15-64 year-old age group. The largest cohort of the population is in the 10-14 age range in Hidalgo as well as in Mexico, while it is in the 45-49 age

range for the average of OECD countries. The proportion of females in total population was 51.7%, slightly higher than the national average of 51.2%.

Figure 1.5. Distribution of the population across age ranges and gender, Hidalgo and Mexico, 2016
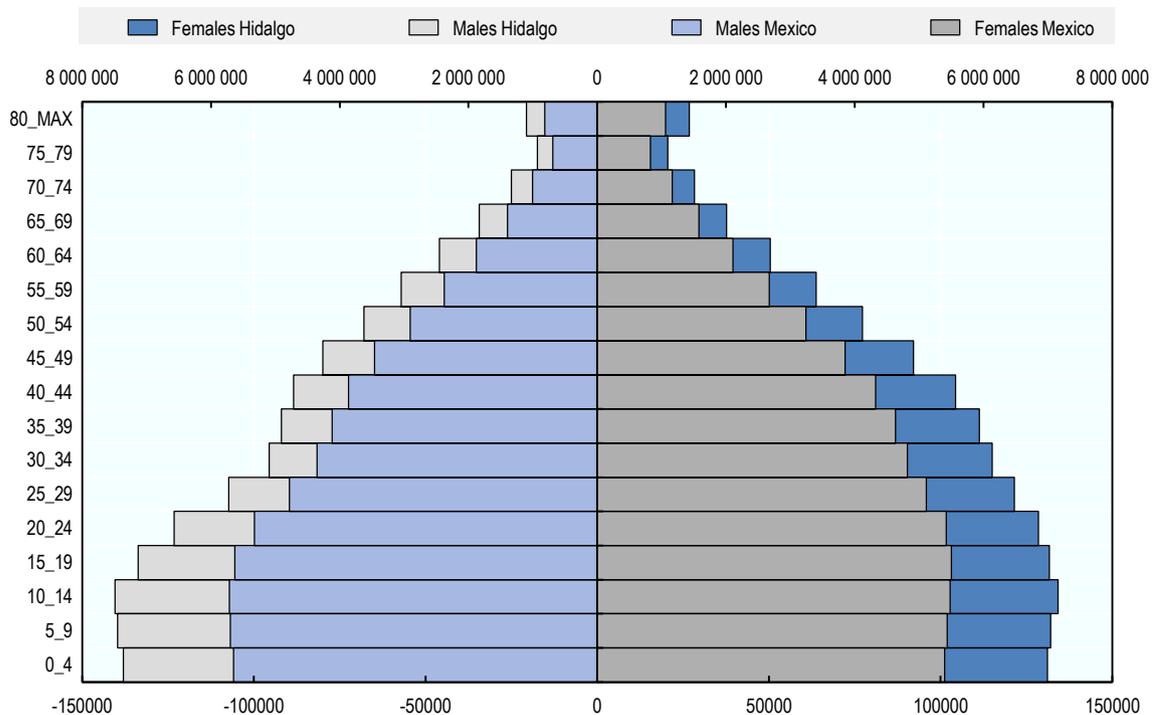
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

National and international migrants feed the working-age population. Hidalgo is a net receiver of migrants from other Mexican states and has a long tradition of international migration to the United States. Between 2010 and 2015, inward migration to the state (of persons older than 5 years old) was 131 485, while outward migration was 77 176, for a net migration stock of 61 295 persons or 2.3% of the total population. Of the migrants that arrived in Hidalgo between 2010 and 2015, 77% were of working age, out of which 15% previously resided in the United States. To put this number in perspective, the United States hosted 97 out of 100 international migrants from Hidalgo in 2010 (INEGI, 2010[9]).

Amongst Mexican states, Hidalgo had the 6th largest net immigration flow as a percentage of total population in 2010 (Figure 1.6). As could be expected by geographical proximity and economic size, most of the inter-state migratory flows occur to and from places close to Hidalgo. In 2010, 71 out of 100 inward migrants came from the state of Mexico and Mexico City, while in 2005, 33 out of 100 outward migrants had these 2 places as a destination.

Figure 1.6. Inter-regional net migration flows rate, TL2 Mexican regions, 2010
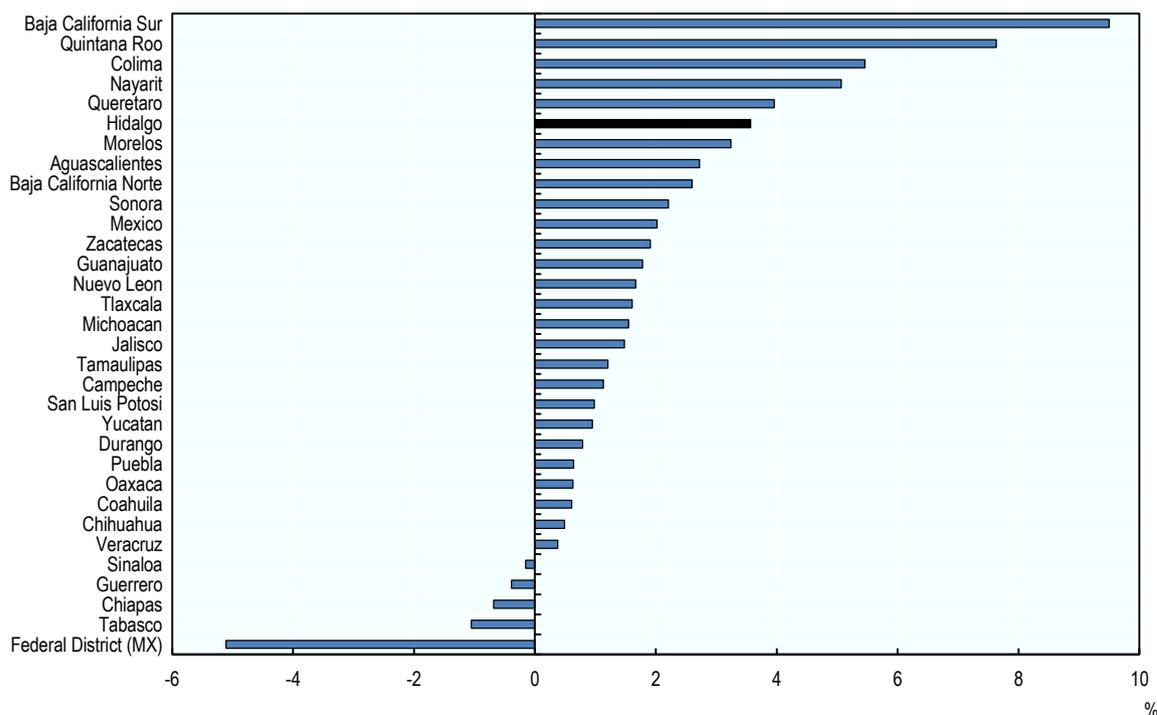
…that requires upskilling and more female participation

Despite recent improvements, the educational attainment levels of the working-age population remain lower than the national average. In 2015, 5% of the working population did not know how to read and/or write. Across educational levels, 22.3%, 54.9% and 22.3% had a primary, secondary and tertiary education as their highest completed educational level respectively. The average number of schooling years in 2015 was 8.7 years, slightly higher than in 2010 (8.1 years) and below the national average (9.2 years).

In Hidalgo, about 19% of children and adolescents of ages 3 to 15 do not have the mandatory level of education and do not attend any educational institution (CONEVAL, 2010[10]). Despite some improvement in 2010, there was no clear decreasing trend in the average secondary education gap of Hidalgo with respect to the national average between 2000 and 2010 (3.4 percentage points) and the top performing region, the Federal District (11 percentage points) (Figure 1.7). In terms of tertiary education, the average educational gap of Hidalgo's working-age population between 2000 and 2010 was larger both with respect to the national average (5 percentage points) and to the Federal District (17 percentage points).

The gap in labour force participation between males and females in Hidalgo is wide for international standards. Female labour participation rates in Hidalgo are only half of their male counterpart: the rate was 77.7 for males and 38.6 for females in 2017. These low rates are in line with national trends, as women in Mexico are relatively much less likely

to participate in the labour market than men in comparison to other OECD countries (OECD, 2017[11]).

Figure 1.7. Share of labour force with secondary and tertiary education (as percentage of the labour force), Hidalgo, Federal District and Mexico, 2000-10
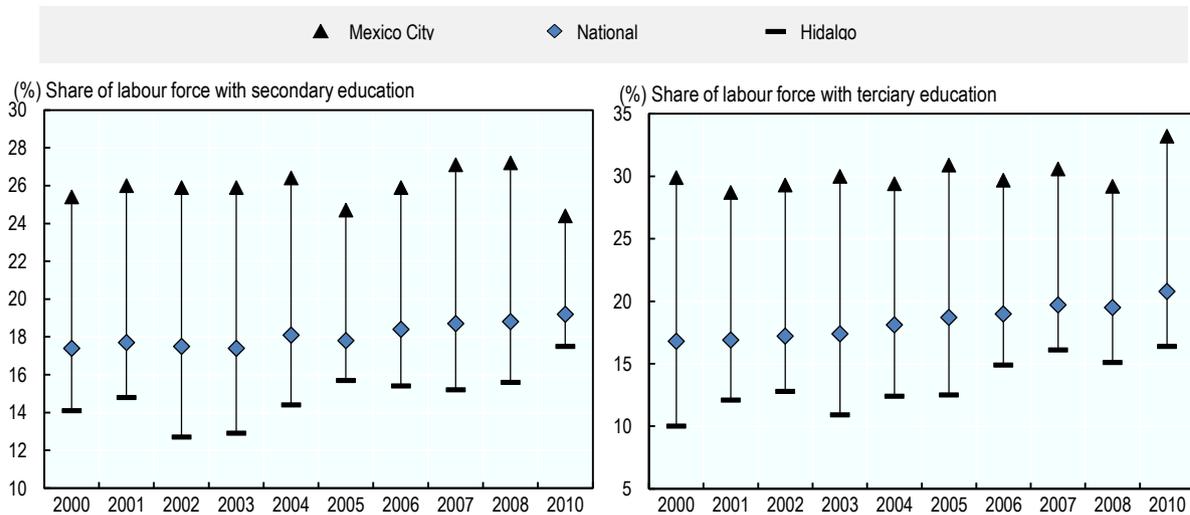
Note: Data for 2009 not available.
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

The quality of the educational system in Hidalgo has improved in relation to other Mexican states but remains low for international standards. The 2017 results of PLANEA, a nation-wide test on language and mathematics, place Hidalgo above the national mean in basic secondary education and at the mean in higher secondary education. However, the OECD Programme for International Student Assessment (PISA) scores in mathematics, an international standard on the quality of the educational system, indicate there is room for improvement in the international context.

In terms of percentage of students with scores below Level 1 (the lowest value in the scale), Hidalgo occupies the 94th position amongst 133 regions worldwide scale, with 25% of students falling in this category. Among Mexican states, Hidalgo ranks at the 20th percentile in PISA scores in mathematics (Figure 1.8). In line with national average values, the standard variation in scores in Hidalgo is 74, which indicates a relatively large variation in performance across schools in the state.

The gender educational gap in Hidalgo, as measured by standardising international scores, is wide. The gap between boys and girls scores in Hidalgo is statistically significant, although not as large as in other states such as Jalisco and Yucatán (Figure 1.8).

The next decades will bring about population ageing and stabilisation in the increase in activity rates. Although the gap between the youth dependency ratio of Hidalgo and the OECD average was still considerable in 2016 (16 percentage points), there is a clear decreasing trend over time, in line with national trends (Figure 1.9). This decrease implies a steady increase in the median age over time, which stood at 27 years in 2015. The demographic transition experienced by Hidalgo over the last decade from the young cohort to the working-age cohort resulted in a rapid increase in the activity rate towards

the OECD average. The steady increase in the activity rate, together with the medium-term increase prospects given the current size of the 10-14-year cohort, translates into opportunities for utilising human capital in production, but also into growing pressures on job creation in the labour market.

Figure 1.8. PISA scores in mathematics for boys and girls, TL2 Mexican regions, 2012
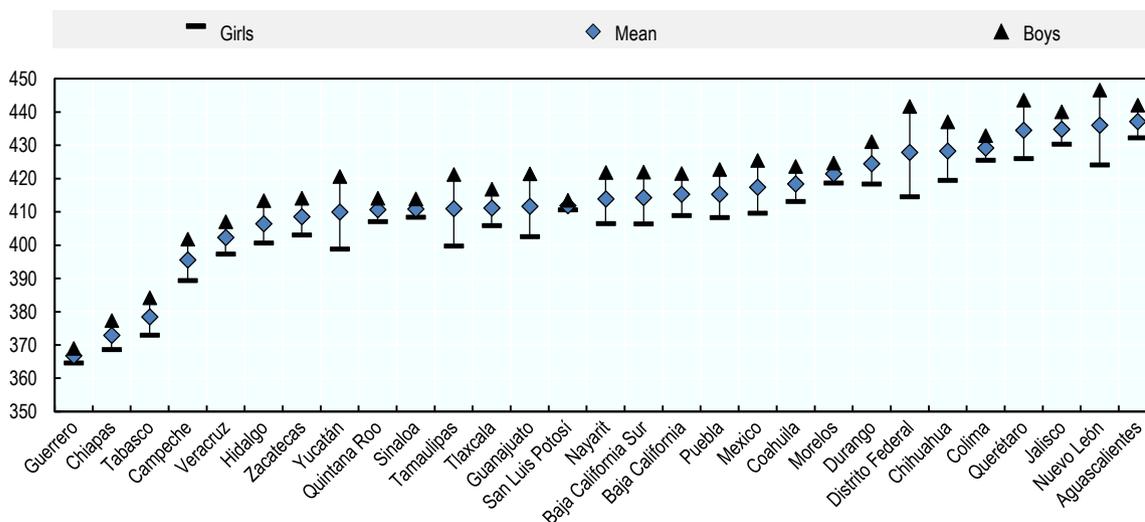
Note: The difference between boys and girls scores for Hidalgo is statistically significant.
Source: OECD (2014[12]), *PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science*, https://doi.org/10.1787/9789264208780-en.

Figure 1.9. Youth dependency ratio and activity rate, Hidalgo and OECD countries, 2001-16
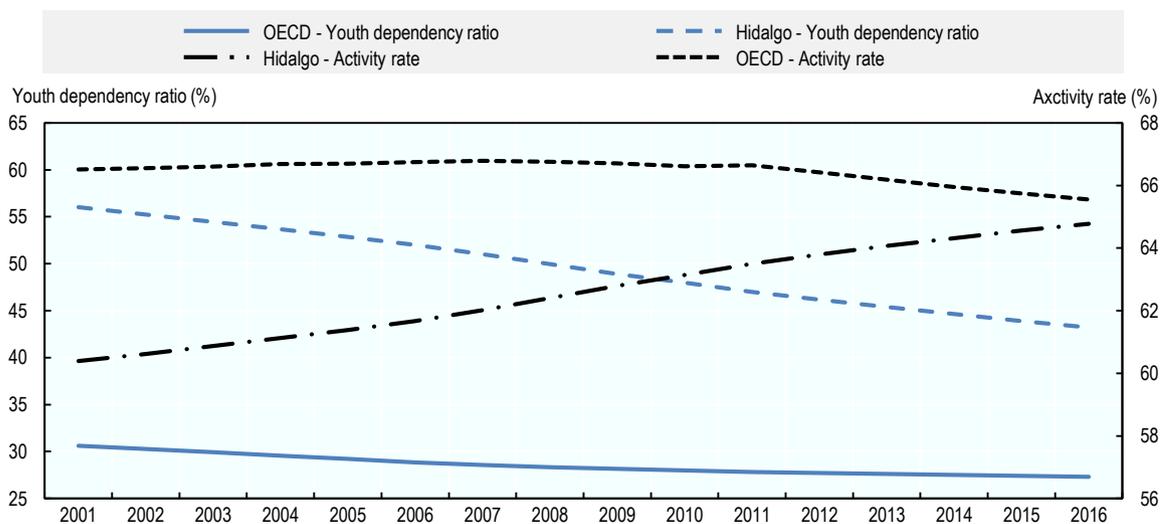
Note: Youth dependency ratio is calculated as the population less than 15 years over the total population; activity rate is the ratio of the working-age population (+15 – 64) over total population.
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

The rural-to-urban transition is not yet complete

The majority of Hidalgo's population resides in rural localities outside metropolitan areas. Six of the 13 TL3 regions of Hidalgo have populations smaller than 160 000 inhabitants. These sparsely populated areas are located in mountainous regions with difficult access, as indicated by their high ruggedness of terrain index values (Figure 1.12). The percentage of the population in urban areas of 15 000 inhabitants or more was 28.8% in 2015. The reminding population was split in 23.6% in mixed localities (with populations above 2 500 and below 15 000) and 47.6% in rural localities. According to the OECD regional typology, which is based on population density thresholds at the local area level, in 2010 Hidalgo recorded a lower percentage of population in urban and rural areas than the national average (14% versus 46%, and 26% versus 37% respectively) and a higher percentage of the population in intermediate areas (60% versus 17%) (Figure 1.10).

Figure 1.10. Share of population by OECD TL3 region type, TL2 Mexican regions, 2010
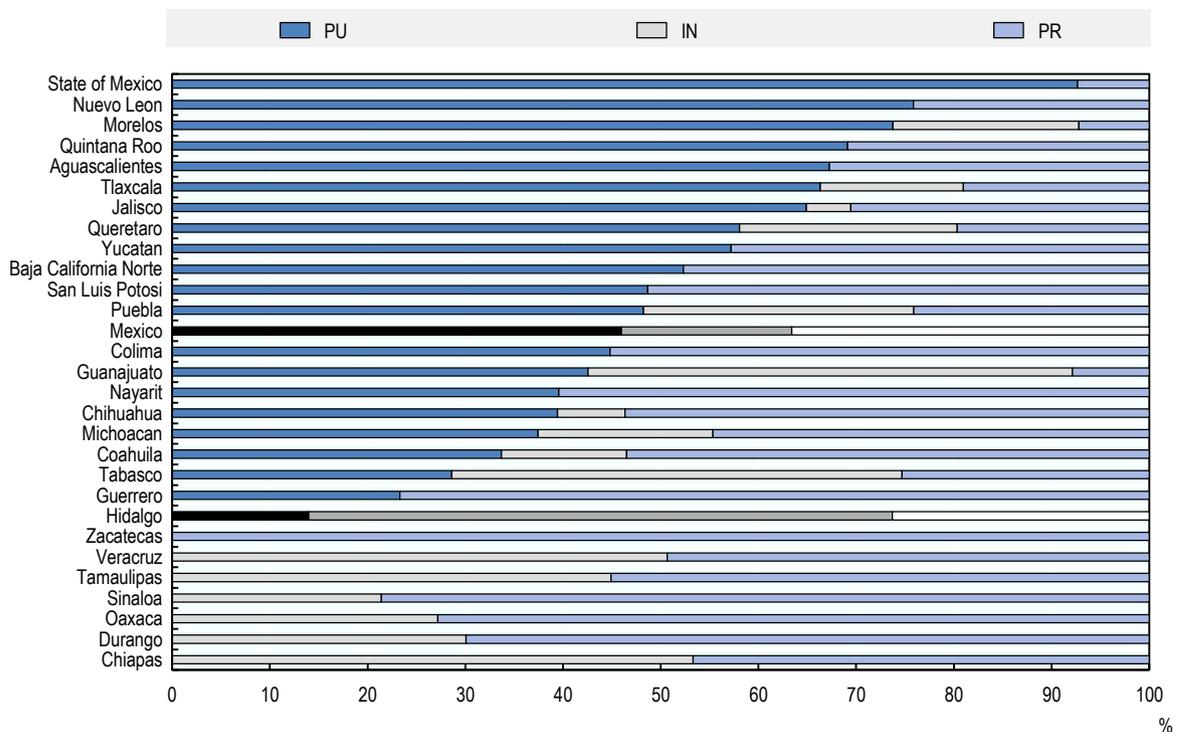
Note: "PU" refers to predominantly urban area, "IN" refers to intermediate areas and "PR" predominantly rural area.
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

A long-term comparison of urbanisation rates with other Mexican states reveals that current urbanisation rates are much lower than what would be expected by Hidalgo's size and level of development. Unlike other roughly comparable states at the beginning of the period in 1950 such as Querétaro and Puebla, urbanisation rates in Hidalgo did not take off in the 1960s and 1970s (Figure 1.11). The underlying reasons for slower urbanisation rates include stronger incentives to remain in rural areas and agricultural activities than

outweighed the benefits of migrating to cities. Among these, low expected urban wages and targeted subsidies that narrowed rural-to-urban work income differentials may have played a defining role in maintaining a significant percentage of the population in low-density areas.

Figure 1.11. Urbanisation rate, selected Mexican TL2 regions and national average, 1950-2015
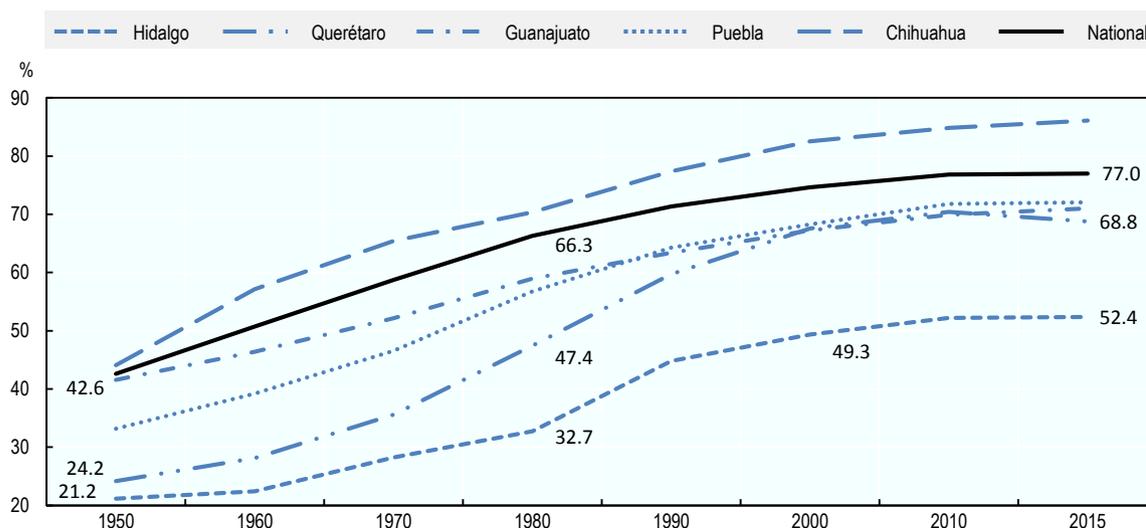
Note: Urbanisation rate defined as percentage of urban population in total.
Sources: INEGI (2010[13]), *Censo de población* 2010; INEGI (2017[14]), *Encuesta Intercensal* 2015.

The metropolitan areas of the capital city of Pachuca de Soto (hereafter Pachuca), Tula and Tulancingo are located in southern plains concentrating most of the economic development of the state. The 3 areas form an arch, above which the largest urban agglomeration is Huejluta de Reyes with a population of about 130 000. The north has mostly high altitudes and relatively dispersed population (Figure 1.4 and Figure 1.12).

The fast-growing metropolitan area of Pachuca is relatively small for Mexican standards. The metropolitan area of the state capital Pachuca, with a population of 646 880 inhabitants in 2014, is the most populated urban centre. Pachuca ranks in the bottom 3 in terms of size amongst 33 metropolitan areas in Mexico. In terms of population growth, it recorded a relatively high annual average population growth rate of 3.5% in the 2000-14 period, above the national average of 2.5% and the second largest amongst metropolitan areas below 1 million inhabitants (Figure 1.13). The state capital is located at less than 100 km from the heart of the Valley of Mexico Metropolitan Area, the largest conurbation of Mexico with a population of over 20.4 million inhabitants.

Figure 1.12. Ruggedness index and location of main cities, Hidalgo
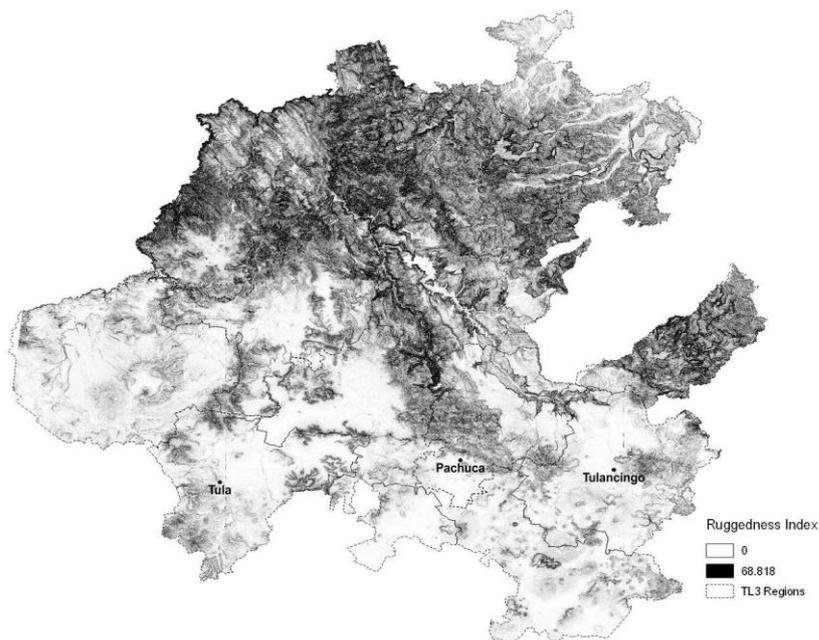
Notes: 30m underlying digital elevation model resolution.
Darker shades indicate higher terrain ruggedness.
Source: INEGI (2013[15]), *Continuo de Elevaciones Mexicano (CEM 3.0)* (Accessed July 2018)
http://www.beta.inegi.org.mx/app/geo2/elevacionesmex/

Figure 1.13. Population and population growth, Mexican metropolitan areas, 2000-14
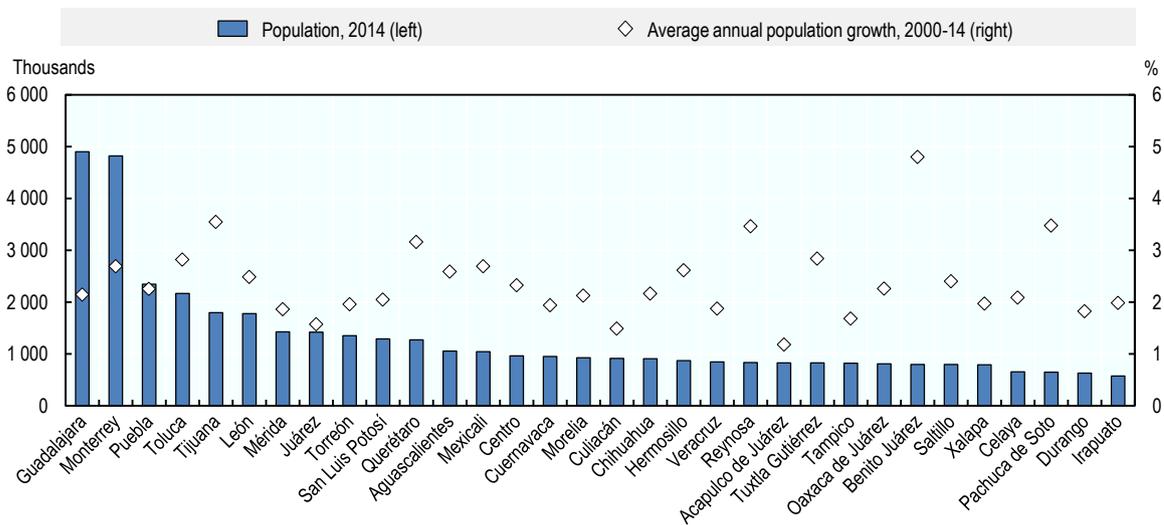
Note: For visual purposes, the figure excludes the largest metropolitan area (Mexico City).
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Under current inequalities in accessibility, opportunities will likely remain concentrated around urban areas

Accessibility, or the ease with which people in different locations can physically access markets – for goods, services and employment and business opportunities – is highly unequal within the state. Figure 1.14 shows the median time needed by municipality to reach a city of at least 50 000 people using the fastest mean of transport available in each 1-km² grid cell (for methodological details see Annex 1.B). Municipalities surrounding the main cities (Tula, Pachuca, Tulancingo) and the smaller urban settlement of Huejluta de Reyes in the north can access at least 1 city both within and outside the state in neighbouring states of Tlaxcala and San Luis Potosí within a 30-60-minute journey. In contrast, municipalities with the worse performance in terms of access are found in between these rings: in municipalities in the northwest such as La Misión, Pacula and Tlahuiltepa, it takes more than a 2-hour journey to reach any city of at least 50 000 inhabitants.

Figure 1.14. Access to a city (in minutes), Hidalgo, 2018
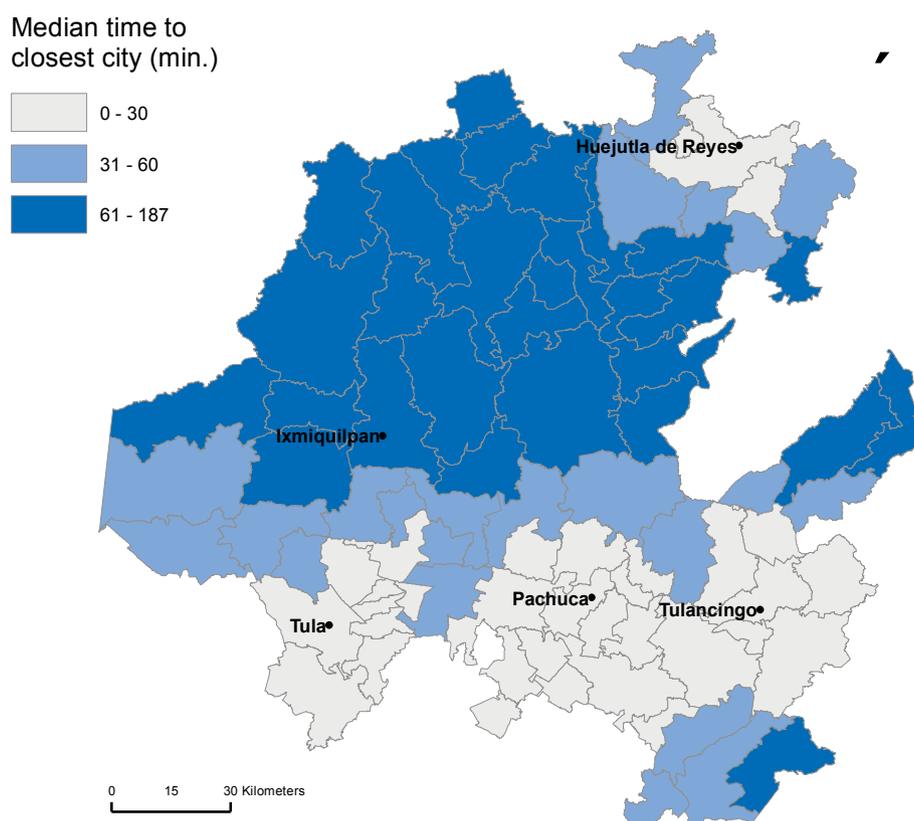
Notes: See Annex 1.B for details on the measurement of accessibility.
Median time calculated from 1-km^2 grid cells
Sources: Weiss et al. (2018[16]), "A global map of travel time to cities to assess inequalities in accessibility in 2015", http://dx.doi.org/10.1038/nature25181; INEGI (n.d.[17]), *Conjunto de Datos Vectoriales de Carreteras y Vialidades Urbanas Edición 1.0 (Distribución por Entidad Federativa)*, http://www.inegi.org.mx/geo/conte nidos/topografia/vectoriales_carreteras.aspx.

Access to the combined markets of Hidalgo, Mexico State and Mexico City is also highly unequal across the state. Figure 1.15 shows the share of the population reachable within a one-hour drive from any locality in the state. While the most accessible localities bordering Mexico State in the south can access 62% of the combined population of Hidalgo, Mexico State and Mexico City within a 1-hour drive, all localities in the north and some localities in the east and west can access less than 2%. In absolute terms, this means that after driving for 1 hour a person in a locality with low accessibility can reach as little as 526 people, while a person in the most accessible locality can access over 17 million people.

Geographic, human settlement patterns and physical infrastructure are behind unevenness in accessibility. Because areas with more difficult terrain pose higher road provision costs, geography largely determines accessibility, as indicated by the match between areas with low ruggedness in Figure 1.12 and areas with high accessibility in Figure 1.15. Geographical conditions also determine the initial location of human settlements. Once established, urban centres tend to grow, giving urban areas a self-sustained advantage in terms of accessibility. This is evident in the presence of large disparities in accessibility even within urban areas (Figure 1.16). The last part of the story is physical infrastructure. Its provision usually serves the most pressing connectivity demands in terms of absolute number of flows, leaving remote and less transited places disconnected from the main transport networks.

Figure 1.15. Accessibility to people within a 60-minute drive, Hidalgo

Percentage of people in Hidalgo,
Mexico State and Mexico City
accessed within a 60 min. drive
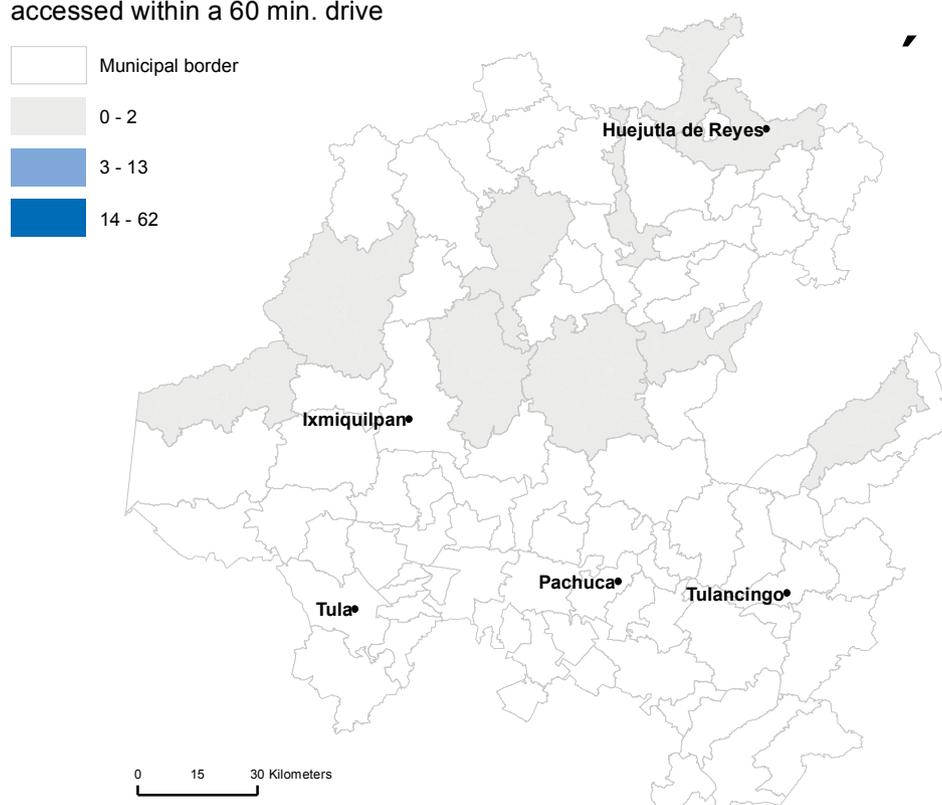
Note: See 0 for details on the measurement of accessibility.
Sources: Open Street Maps (2018[18]), database (Accessed July 2018) https://www.openstreetmap.org; INEGI (n.d.[17]), *Conjunto de Datos Vectoriales de Carreteras y Vialidades Urbanas Edición 1.0 (Distribución por E ntidad Federativa),* http://www.inegi.org.mx/geo/contenidos/topografia/vectoriales_carreteras.aspx; INEGI (2010[13]), *Censo Poblacional 2010.*

Figure 1.16. Accessibility to people within a 60-minute drive, Hidalgo (detail)
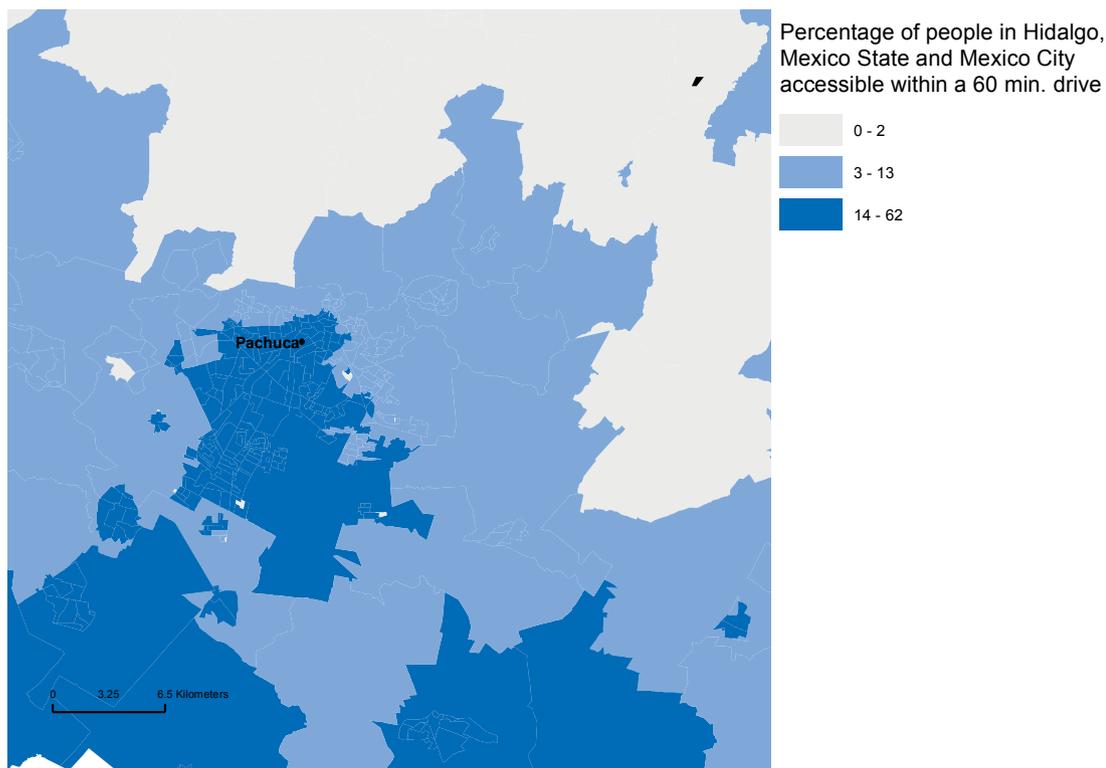
Sources: Open Street Maps (2018[18]), database (Accessed July 2018) https://www.openstreetmap.org; INEGI (n.d.[17]), *Conjunto de Datos Vectoriales de Carreteras y Vialidades Urbanas Edición 1.0 (Distribución por E ntidad Federativa),* http://www.inegi.org.mx/geo/contenidos/topografia/vectoriales_carreteras.aspx;

The territorial distribution of economic activity in Hidalgo is highly concentrated and shows a strong north-south divide. The distribution of gross total output per head in 2014 across municipalities is highly unequal (Figure 1.17). In most municipalities, gross total output per head was only one-fifth of the municipality with the highest value, Tepeapulco, which has a strong manufacturing base. In the north, most municipalities' total output per head is less than 5% of Tepeapulco's, indicating a rather thin economic base outside a handful of municipalities in the south around Tula and Pachuca.

Disparities in accessibility reinforce a highly uneven distribution of businesses across municipalities. The index of geographic concentration[2] across municipalities is 39.5 when calculated for population and 50 when calculated over businesses, indicating that economic activity is far more concentrated than population. Half of all businesses are concentrated in just 7 municipalities, with Pachuca alone concentrating 18% of all the economic units of the state (Figure 1.18). The strong north-south divide in population is even more marked in terms of economic activity. The major urban areas outside the southern area, Ixmiquilpan and Huejutla de Reyes, concentrate only 4.5% and 4.6% of all businesses in Hidalgo respectively.

Figure 1.17. Gross total output per capita, index by municipality, Hidalgo, 2013
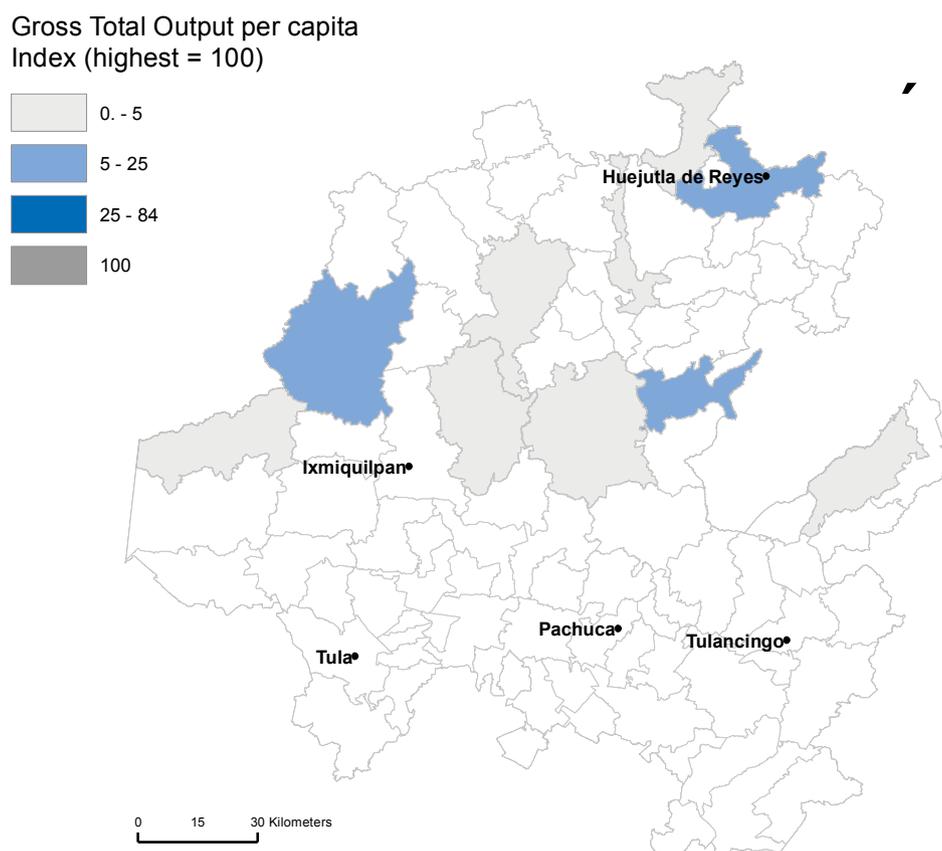
Sources: INEGI (2015[19]), *Economic census 2014*; INEGI (2017[14]), *Encuesta Inter-censal 2015*.

While most businesses in Hidalgo are microenterprises, the small and medium business sector has little weight and is geographically concentrated. The distribution of businesses by size class across municipalities is highly skewed towards small size establishments (Figure 1.19). In 2013, the overwhelming majority of businesses across municipalities in Hidalgo were micro-enterprises with less than ten employed persons. In fact, more than half of total employment is in micro-enterprises, while the share of employment in small and medium businesses (employing between 11 and 250 persons) was 28% (INEGI, 2015[19]).

The share of employment in businesses with 5 employed persons or less varied from 80% to 98% across municipalities, with an average value of 91%. The share of businesses by size class and its geographical variation decrease abruptly for larger sizes. In fact, 28 out of 84 municipalities registered 0 businesses with 31 to 50 employed persons. This number increases to 50 out of 84 in the 51 to 100 employed category, indicating that the small and medium business sector is not only small but also geographically concentrated.

Figure 1.18. Share of economic units by municipality, Hidalgo, 2017
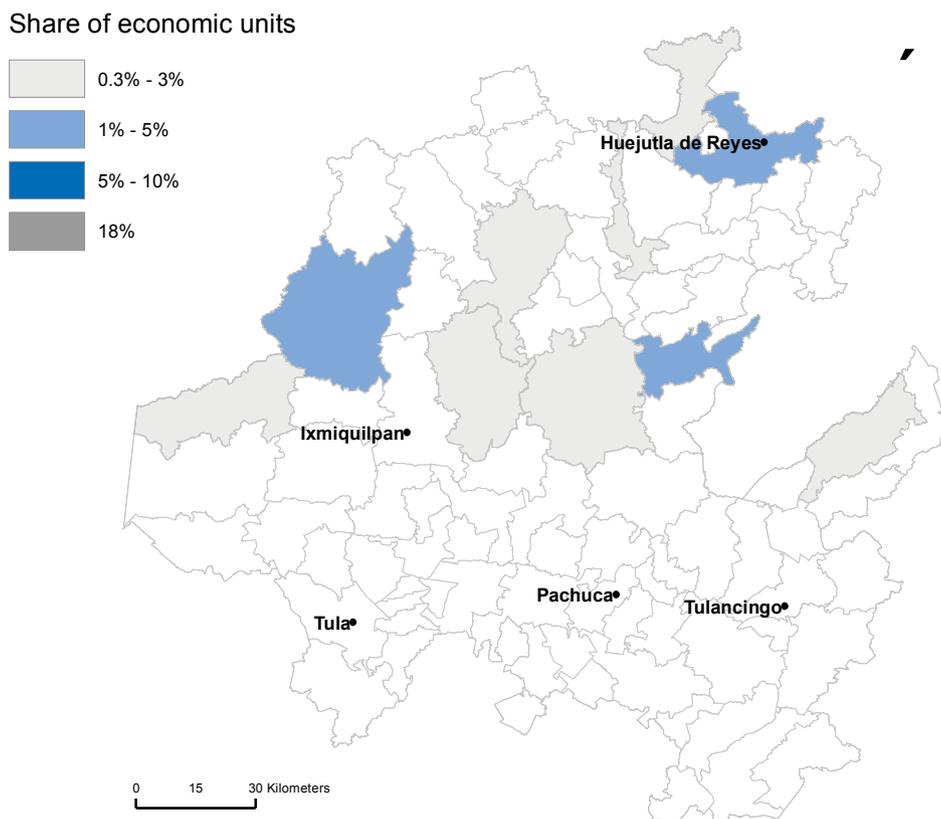
Source: INEGI (2017[20]), *Directorio Estadístico Nacional de Unidades Económicas (database)*.

Figure 1.19. Distribution of number of establishments by size across municipalities, Hidalgo, 2013
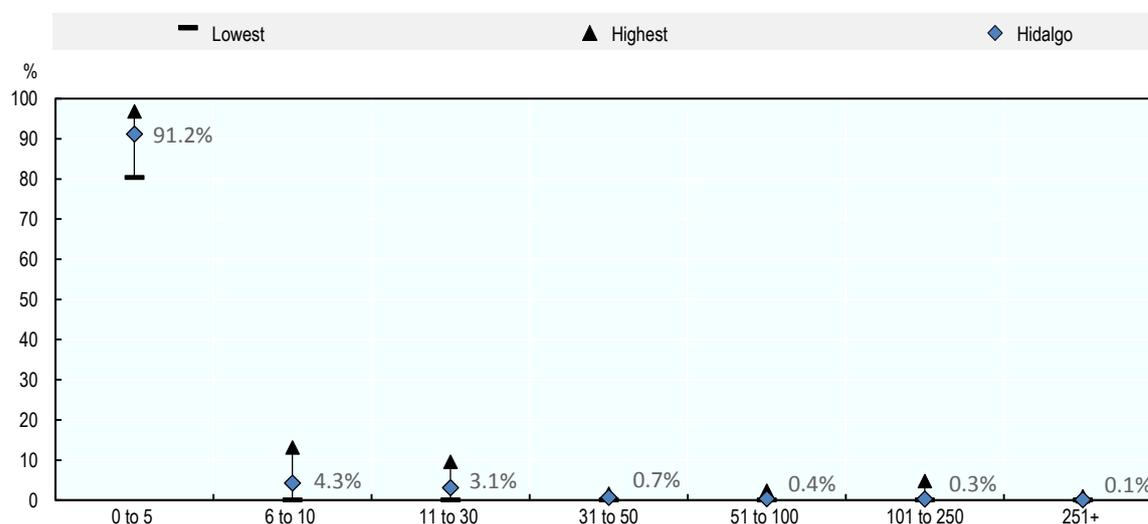
Source: INEGI (2015[19]), *Economic census 2014*.

Unlocking economic development through structural change

Hidalgo's economic size and its share in the national economy increased in the past decade. Hidalgo's GDP stood at USD 32 613 billion in 2016, about a third more than in 2005 (Figure 1.20). The expansion in economic size took off in the aftermath of the financial crises in 2008-09 at a stronger pace than states of initial comparable size such as Yucatán, and Oaxaca, with a notable acceleration in the period 2013-16. The strong performance in terms of GDP has translated into a larger contribution of Hidalgo to the national GDP, from 1.38% in 2003 to 1.57% in 2016, ranking as the 21st largest among the 32 TL2 units in Mexico, 2 positions above 2003 levels (Figure 1.21).

Hidalgo's full growth potential has yet to be realised

Hidalgo's GDP per capita stood at USD 11 195 in 2016, the 25th largest amongst Mexican TL2 regions. Historically, the gap in GDP between Hidalgo and comparable Mexican TL2 regions became wider in the period of trade liberalisation that started in the early 1980s (Figure 1.22). Growth after the last of a series of economic crises in 2008 accelerated, although at a slower pace than in other states such as Guanajuato, Querétaro and Chihuahua.

Hidalgo has been catching up with the national average over time albeit at a moderate pace. The ratio of Hidalgo's GDP per capita to the national average was 0.66 in 2016, up from 0.59 in 2003, thanks to faster catching-up trends in the 2010-15 period (Figure 1.23). Average labour productivity, measured as gross value added (GVA) per worker, stood at USD 27 390, the 20th largest amongst Mexican TL2 regions. In terms of labour productivity growth, Hidalgo registered an average growth rate of 3% in the 2010-15 period, the 6th largest across Mexican TL2 regions. The gap in terms of worker productivity, measured by the ratio of GVA per worker over the national average stood at 0.65 in 2014, slightly higher than in 2010.

Hidalgo's productivity levels across all industries rank around the bottom 5% across OECD regions, and in the top 25% in manufacturing (Table 1.1). GDP per worker in Hidalgo in 2014 was the 29th lowest amongst 385 OECD regions, above regions in Bulgaria, Chile, Colombia, Mexico and Romania. The absolute gap in terms of GVA per worker with respect to the median of OECD regions was USD 37 939. Hidalgo occupies a higher place in terms of productivity per worker in the manufacturing sector, ranking 238th among 290 OECD regions, with levels above regions in Bulgaria, Chile, Greece and Portugal, among others.

Figure 1.20. Gross domestic product, Mexico and selected TL2 Mexican regions, 2005-16
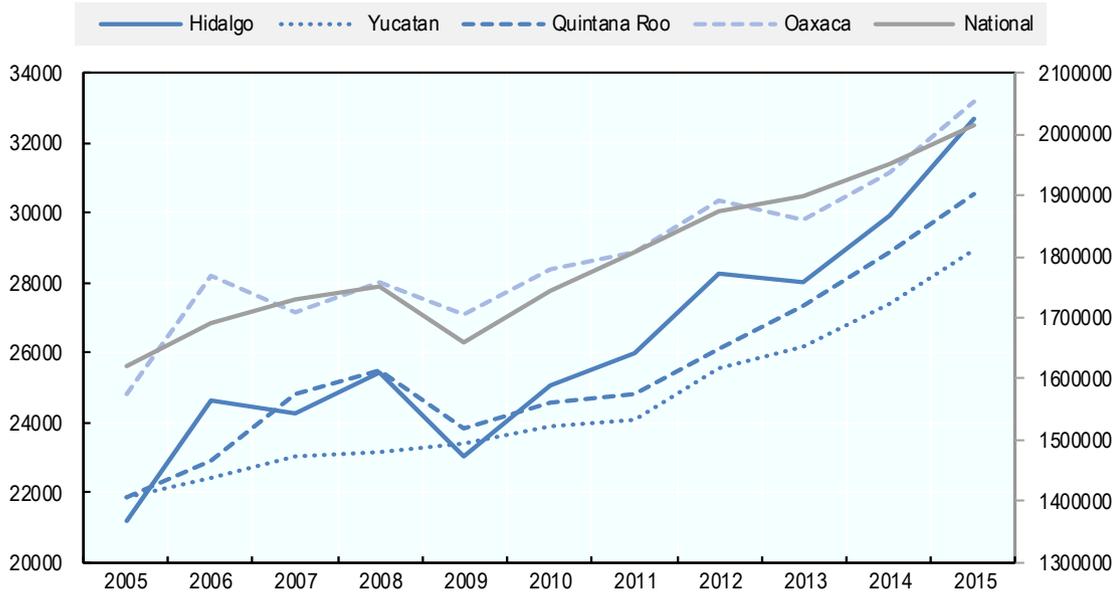
Note: In constant USD 2010. Secondary axis used to represent national values.
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Figure 1.21. Contribution of GDP, TL2 Mexican regions, 2003 and 2016

Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.
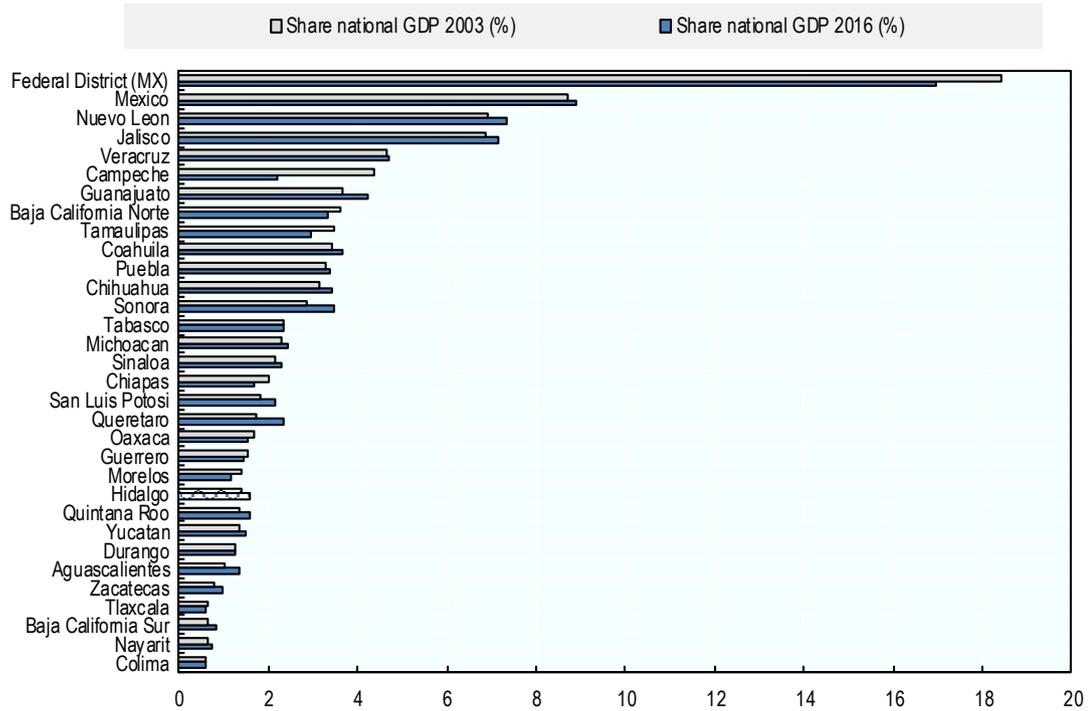
Figure 1.22. Gross domestic product index, Hidalgo and selected TL2 Mexican regions, 1940-2015

Index 1940 = 100, based on constant values in 1993 prices
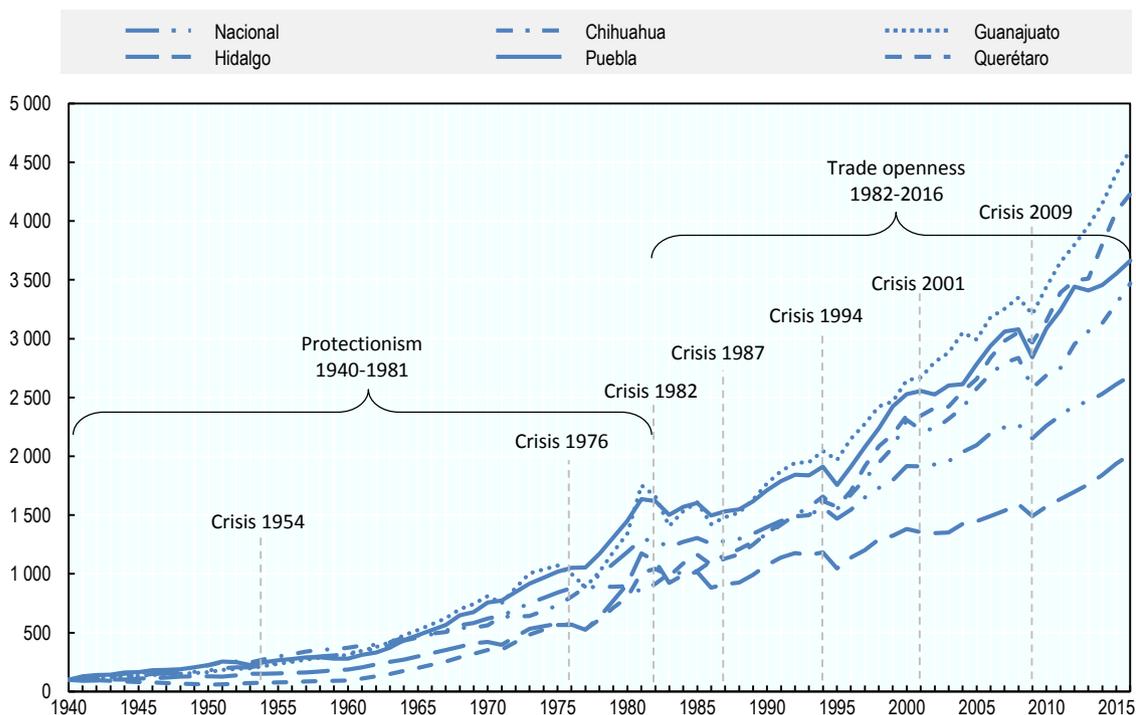
Source: INEGI (2015[19]), *Economic census 2014*; German-Soto Vicente (2017[21]), *Generación del Producto Interno Bruto Mexicano por Entidad Federativa, 1940-1992*.

Figure 1.23. Ratio of GDP per capita and GVA per worker, Hidalgo over national average, 2003-16
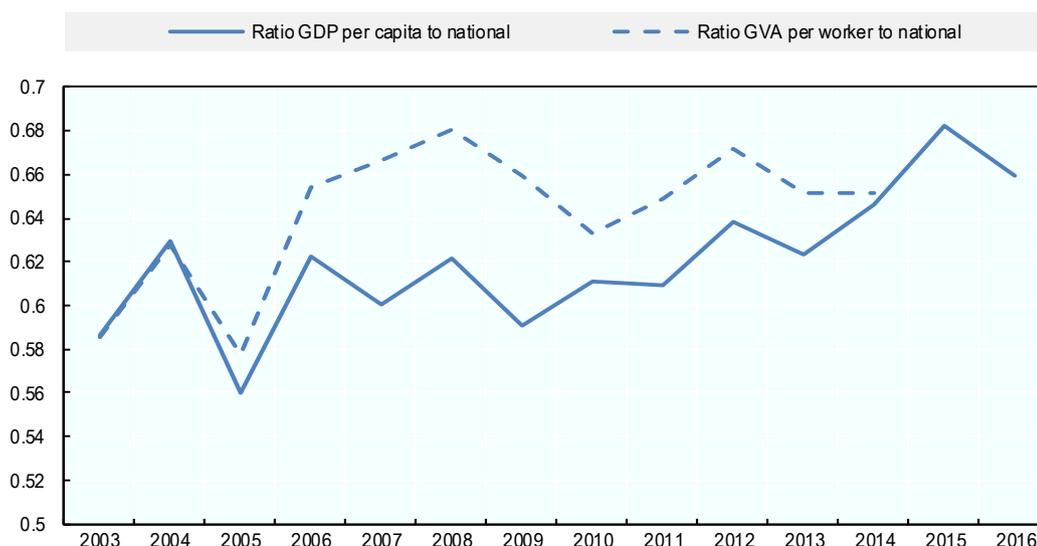
Note: GVA per worker calculated using employment by place of residency (GVA and employment values for 2015 not available).
A value of 1 indicates no gap with the national average.
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Table 1.1. Comparison between GDP, GVA and GVA in manufacturing per worker, Hidalgo and OECD regions, 2014

	Hidalgo	5% percentile OECD	25% percentile OECD	Median OECD
GDP per worker	2 5899	22 201	48 619	69 134
GVA per worker	2 4839	25 343	46 588	62 779
GVA per worker manufacturing	4 0820	19 617	49 241	75 710

Note: GDP per worker, GVA per worker and GVA per worker in manufacturing OECD values calculated across 385, 344 and 290 TL2 regions with available data for 2014. Employment measured as employment at a place of residency.
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Although Hidalgo's economy performed strongly in the national context, a comparison with similar OECD regions reveals there is room to access untapped resources. Hidalgo's performance in terms of GDP per capita growth over the 2003-15 period was relatively high compared to other Mexican states, but relatively low with respect to comparable OECD regions.

Hidalgo registered a GDP per capita growth rate of 2.11% in the 2003-16 period, above similar states such as Durango, Morelos and Yucatán and the national average of 1.01% (Figure 1.24). In the meantime, the top performing state of Querétaro, San Luis Potosí and 11 out of 15 comparable non-Mexican regions grew at a faster rate, with top performing regions registering growth rates as high as 4.6% in the same period.

The situation is similar with respect to GVA per worker in the 2010-14 period, during which Hidalgo registered a growth rate of 2%, in line with most of the comparison group of OECD regions (Figure 1.25). Hidalgo's labour productivity growth rate was the second largest amongst comparable Mexican states, behind the impressive 5% growth rate of Querétaro.

Figure 1.24. GDP per capita levels and growth, Hidalgo and selected OECD TL2 regions, 2003-16

Data expressed in percentage (%)

Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.
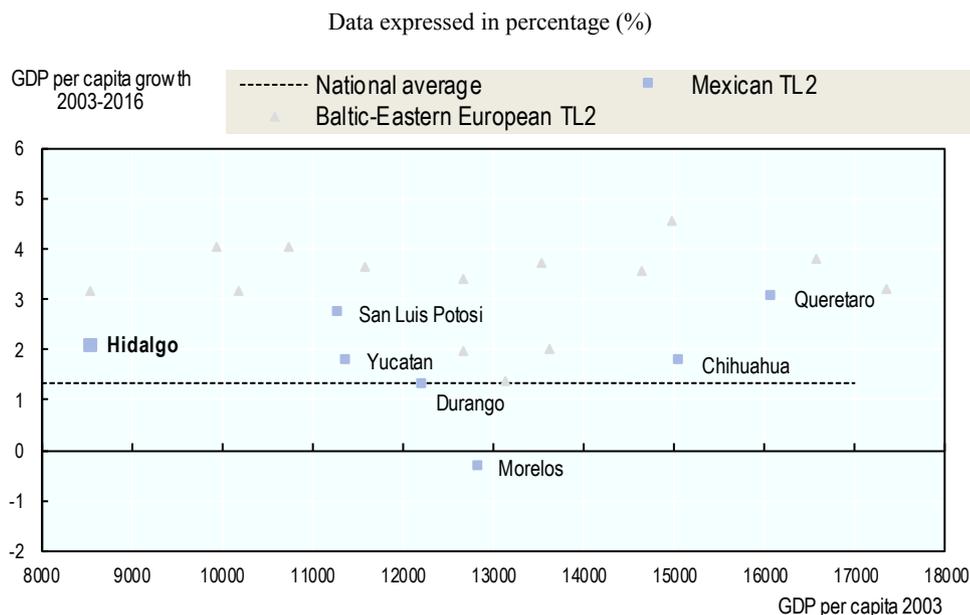
Figure 1.25. GVA per worker levels and growth, Hidalgo and selected OECD TL2 regions, 2010-14
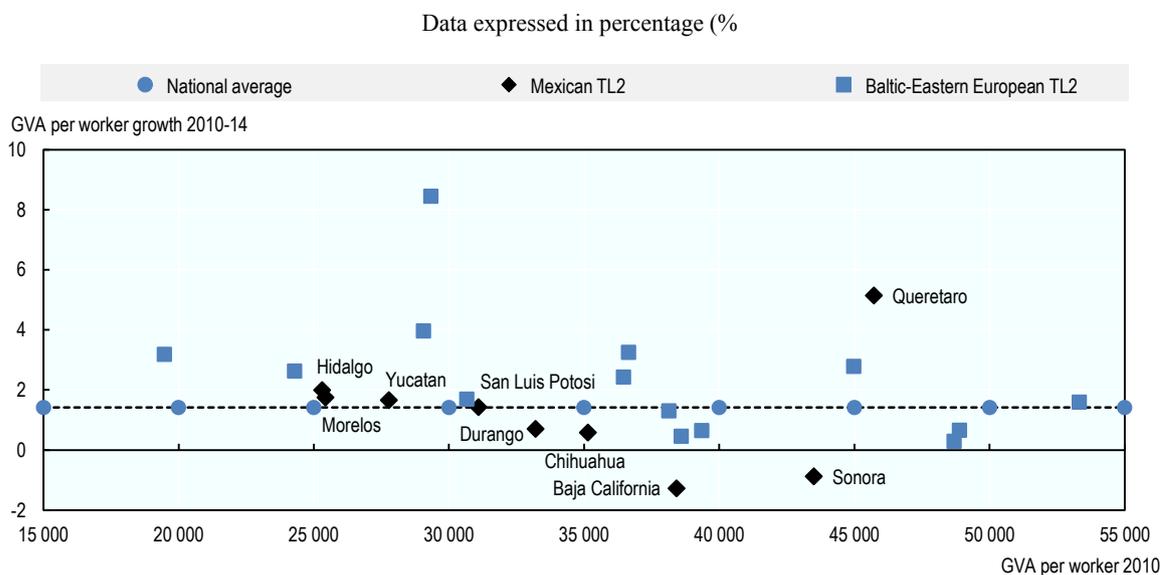
Data expressed in percentage (%

Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

The manufacturing sector could be an engine of growth in Hidalgo if employment growth keeps pace with the sector's expansion. The comparison of manufacturing GVA growth against employment growth is indicative of the labour generation capacity of the manufacturing sector. High GVA growth rates accompanied by slow employment growth

rates over a given period are a symptom of a highly capital-intensive manufacturing sector with little labour absorption capacity. While Hidalgo registered manufacturing GVA and employment growth rates below the national average, most comparable Mexican states registered high rates of both GVA and employment in manufacturing (Figure 1.26). An extreme version of the situation where manufacturing GVA expands while manufacturing employment declines is visible in other comparable Mexican states such as Yucatán and Morelos, and several other comparable OECD regions.

Transitioning towards sectors with higher technological content will be difficult unless there is an explicit strategy to address current innovation gaps. The innovation performance of Hidalgo in the national and international context is relatively poor and has not improved over time. The number of patents per million inhabitants in Hidalgo was 0.5 in 2015 and 0.8 in 2002, indicating that innovation performance as fared by this measure has worsened over time. Meanwhile, the average of Mexican states increased from 1.2 in 2002 to 2.8 patents per million inhabitants in 2015. Hidalgo lagged behind comparable Mexican states such as San Luis Potosí and Chihuahua that started from a comparatively small patenting base in 2002. Other OECD regions with a similar economic structure in Baltic and East European countries had a stronger basis for technological transition even in 2002.

Figure 1.26. GVA and employment growth in the manufacturing sector, Hidalgo and selected OECD TL2 regions, 2010-14

Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.
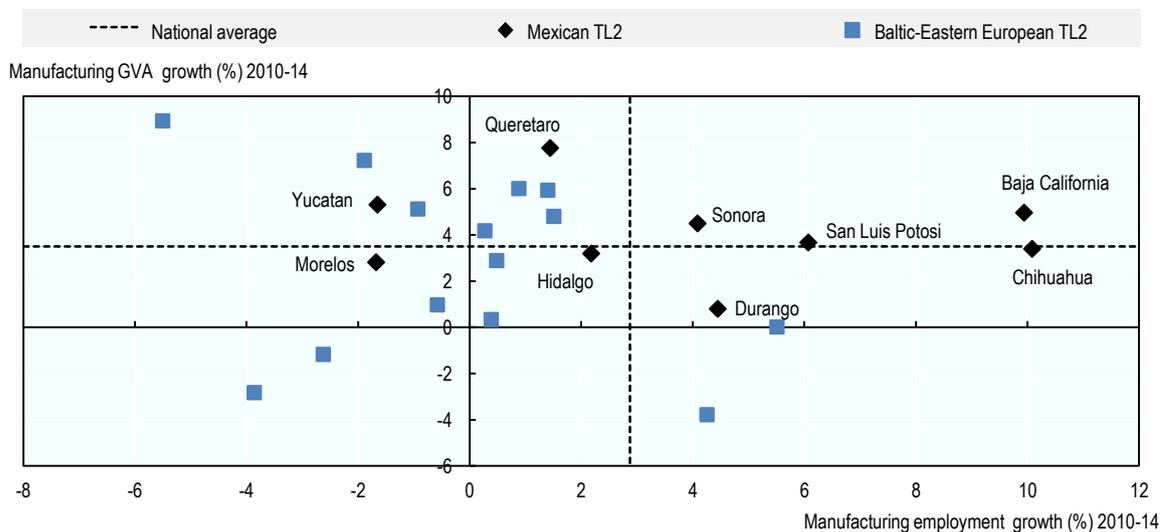
Figure 1.27. Patent intensity, Hidalgo and selected OECD TL2 regions, 2002-15

Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.
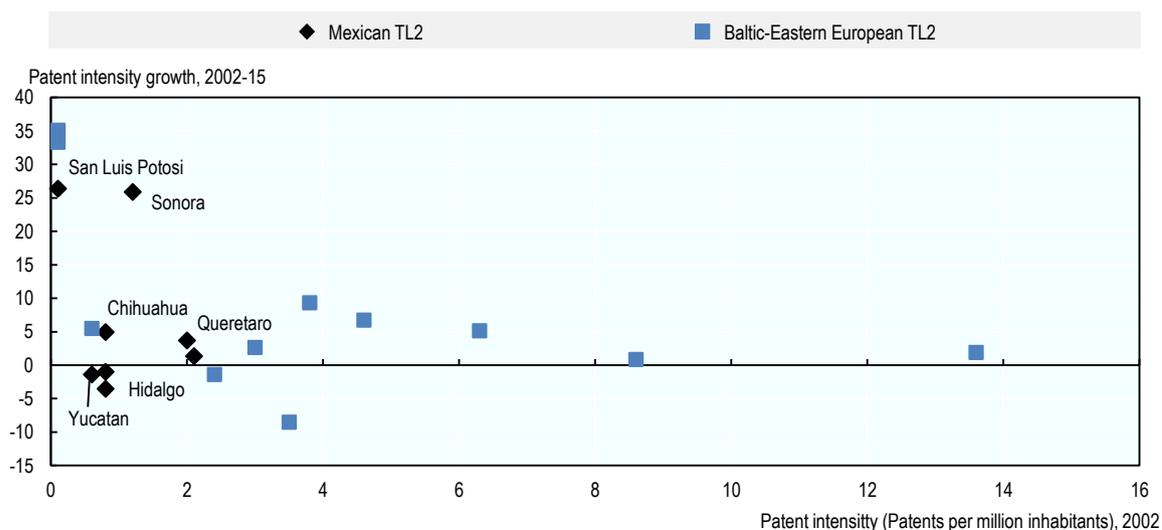
Tertiarisation will continue shaping a diversified economic structure

Hidalgo has a diversified economic structure, with a relatively high but declining share of manufacturing. The share of occupied population over total in manufacturing, mining and electricity sectors has remained relatively stable since 1970, while the service sector exploded at the expense of the agricultural sector since the 1990s (Figure 1.28). The share of occupied population in manufacturing, mining and electricity declined by 3 percentage points since 2000 to reach 17% in 2015.

Figure 1.28. Distribution of the occupied population by sector of activity, Hidalgo, 1970-2015
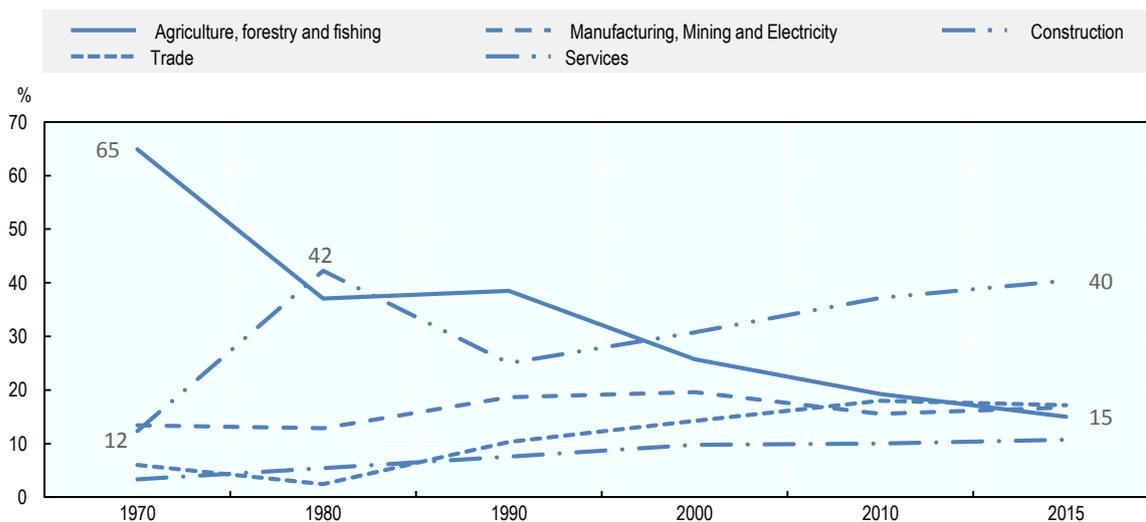
Sources: INEGI (2010[13]), *Censo de población* 2010; INEGI (2017[14]), *Encuesta Intercensal* 2015.

By 2015, manufacturing and distributive trade, repairs and other activities explained over half of the state's GVA (Table 1.2). The share of tradable goods and services in total GVA was 36% in 2015, 2 percentage points below the national average and down from 53% in 2004.

Table 1.2. Distribution of GVA by economic sectors, Hidalgo and Mexico, 2015

Sector	Hidalgo (%)	National (excl. Hidalgo) (%)
Distributive trade, repairs, transport, accommodation, food service activities (NT)	25.5	26.4
Manufacturing (T)	20.6	16.1
Real estate activities (NT)	13.5	12.0
Public administration, compulsory social services, education, human health (NT)	12.1	10.3
Construction (NT)	10.1	7.8
Non-manufacturing industry, including energy (T)	6.0	8.0
Agriculture, forestry and fishing (T)	3.7	3.2
Financial and insurance activities (T)	2.6	5.1
GVA in other services (T)	2.2	2.2
Professional., scientific, technical activities, administrative, support service activities (NT)	1.7	6.2
Information and communication (T)	0.6	3.1

NT = Non-tradable sector.
T = Tradable sector.
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Hidalgo does not have a particularly specialised productive structure and has become more diversified over time. The state's Specialisation Index measures how similar the state productive structure is with respect to the national average. The index indicates whether sectors are over- (larger than 1) or under-represented (smaller than 1) with respect to the national average. According to this measure, Hidalgo has one of the lowest levels across Mexican states (Figure 1.29). In line with national trends, specialisation levels in Hidalgo decreased between 2004 and 2015. With respect to the national composition, in 2015 construction (1.30) and manufacturing (1.27) were the most over-represented sectors, while information and communication (0.20), professional, scientific, technical activities, administrative, support service activities (0.27), financial and insurance activities (0.52) and were the most under-represented.

Figure 1.29. Specialisation Index, selected Mexican states, 2004, 2009 and 2015
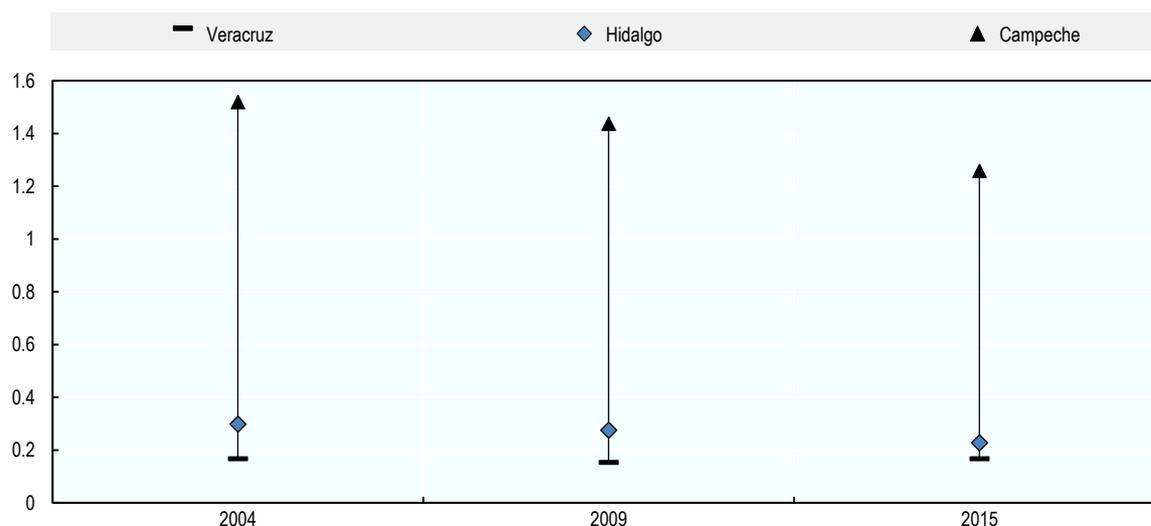
Notes: The index is calculated as the sum of the absolute values of the difference between the share of each sector and the corresponding national average, with 0 indicating that the economic structure of the state is the same as the national and 2 indicating an entirely different structure (the maximum value is calculated as 2(I-1)/I, where I = 11 industries).
Higher values of the index indicate higher sectoral specialisation.
Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Low productivity non-tradable service activities have considerable weight in the service sector of Hidalgo. The service sector GVA is dominated by retail and wholesale activities, that together in 2014 had a combined share of 65% of GVA in the service sector (Figure 1.30). Over 60% of GVA in services is produced in non-tradable sectors, which include healthcare and social assistance, administrative and support activities, education, accommodation and food services, wholesale trade and retail trade and other services.

The evolution in the composition of the service sector over time does not indicate a clear trend towards tradable service activities. Tradable services have gained momentum as complements to manufacturing in international markets. In Hidalgo, there are no visible signs of increasing specialisation in tradable services besides an increase in the share of the wholesale trade sector in the 2004-13 period (Figure 1.30). Labour productivity, measured as output per hour, is on average 2.6 times lower in the non-tradable sector compared to the average of the tradable sector. Labour productivity in retail trade, the sector with the highest participation in terms of GVA, is the third lowest amongst service activities.

Figure 1.30. Share of service GVA and labour productivity, Hidalgo, 2004-13
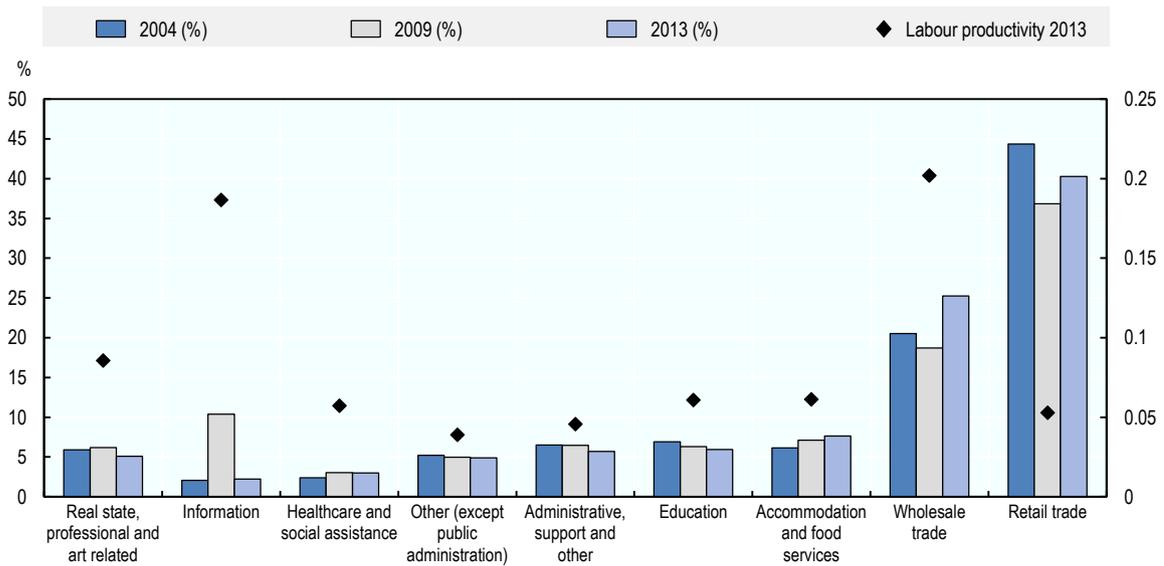
Note: Labour productivity is calculated as total production (in current MXN) over hours worked.
Source: INEGI (2015[19]), *Economic census 2014*.

A considerable share of manufacturing value added has relied on an industry with strongly limited potential for spill-overs to small and medium enterprises and other industries. The petroleum and coal products industry share in total GVA was 43% in 2013, sharply increasing its participation from 17% in 2008 (Figure 1.31). The next industries in importance were the non-metallic mineral products (10%), textile mills (8.3%) and food (7.3%) sectors, which respectively had 805, 36 and 5 616 establishments in 2014. In the petroleum and coal products industry, there were only 8 registered establishments in 2013, a much lower value compared to the state average of 564 establishments across industries.

With its exceptionally high concentration in terms of establishments, the most important sector in terms of GVA currently integrates only a few small and medium-sized enterprises. Furthermore, according to the national input-output matrix for 2013, 73% of the inputs of the petroleum and coal products industry come from the gas and petroleum industry, which evidences the industry's low upstream spill-over potential in the value chain.

Figure 1.31. Share of manufacturing GVA and number of establishments, Hidalgo, 2013
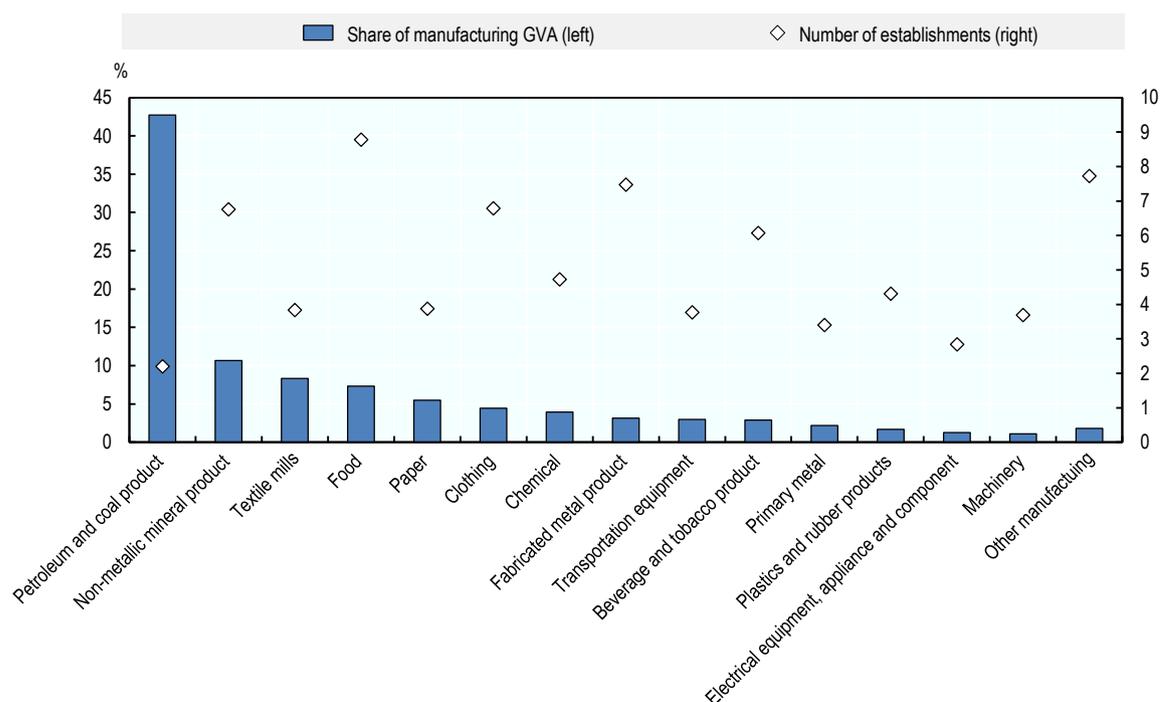
Note: The establishment count by sector displayed in natural logarithms.
Source: INEGI (2015[19]), *Economic census 2014*.

Investment volatility hinders the consolidation of key manufacturing sectors

Specialisation in oil-related industries partly explains a loss in the capacity to attract investment to the state within the national context between 2004 and 2013. Total investment, defined as the change in assets, inputs and products within a period, was 3.6% of the total value added in 2013, around one-third of the national average (Figure 1.32). Total investment in fixed assets, or gross fixed capital formation, as a share of total value added, was 2.06% in 2013, down from 11% in 2004 and 15% in 2009.

The gap with the national value, which in 2013 was of around 7 percentage points, indicates that Hidalgo had relatively low capacity to attract investment in fixed assets. This was due partly because of a substantial drop in oil-related manufacturing investment. The breakdown of total investment in fixed assets as a percentage of value added indicates that the manufacturing sector – and more specifically the manufacturing of products derived from oil and charcoal – took a severe hit over the period, which even turned negative its share in total investment in fixed assets across sectors. This share was 51% in 2009, which gives an indication of the large volatility of investment in fixed assets.

Foreign direct investment (FDI) flows have fluctuated widely over time. Total FDI flows to Hidalgo amounted to USD 357 million in 2017 and accumulated to about USD 4 000 million between 1999 and 2017 (Figure 1.33). In 2015, 1.5% of the total FDI to Mexico went to Hidalgo, placing the state 17th amongst 32 states and federative units. Over the 1999-2017 period, FDI flows have not shown a steady increase over a sustained period and have instead fluctuated around a mean value of USD 52 million. This pro-

cyclical behaviour is also present in states one position above (Morelos) and one position below Hidalgo (Oaxaca) in terms of participation in total national FDI flows by state.

Figure 1.32. Gross fixed capital formation across non-agricultural sectors, Hidalgo, 2013
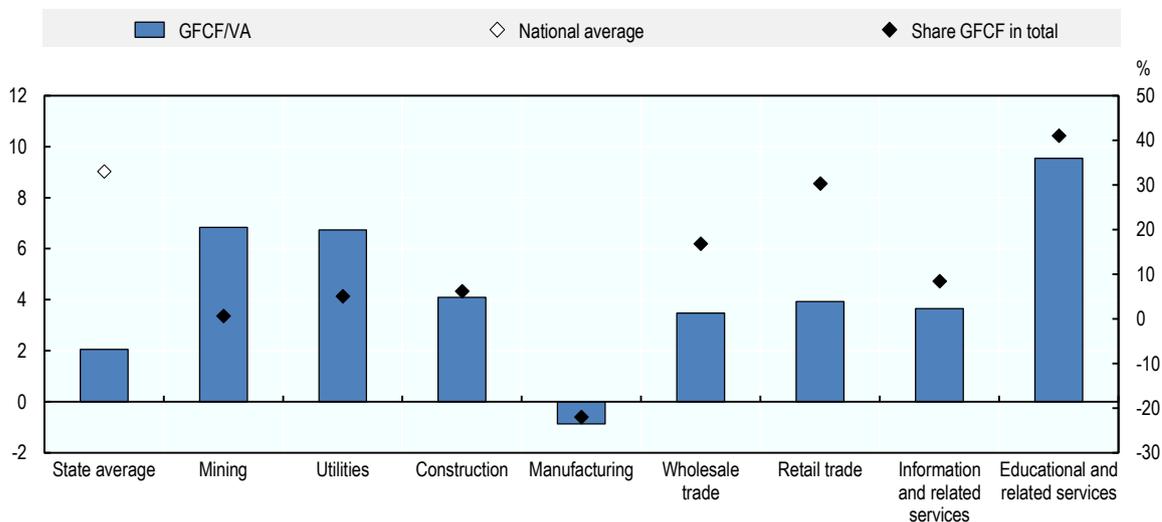
GFCF: Gross fixed capital formation.
VA: Total value added
Notes: Agriculture's share in total gross fixed capital formation in 2014 was 0.7%. Information-related services include finance and insurance, real estate and rental and leasing, professional, scientific and technical services, management of companies and enterprises, administrative and support and waste management and remediation services.
Gross fixed capital formation is the change in investment in fixed assets (machinery, property, etc.).
Source: INEGI (2015[19]), *Economic census 2014*.

Figure 1.33. Nominal foreign direct investment, Hidalgo, Morelos and Oaxaca, by trimester, 1999-2017
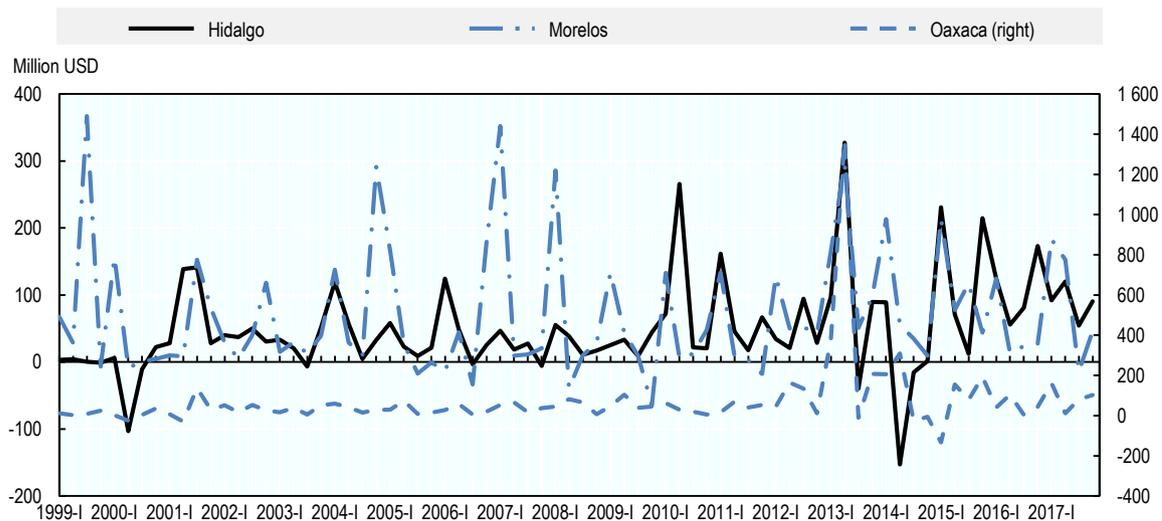
Source: National Registry of Foreign Investment (2018[22]), Secretary of Economy, (Accessed August 2018) https://www.gob.mx/se/acciones-y-programas/competiti.

Foreign Direct Investment (FDI) has mostly originated in the United States and has concentrated in manufacturing. Across countries, 40% of FDI flows to Hidalgo between 1999 and 2017 came from the United States, 19% from Canada, 15% from Spain and the remaining 25% from other countries. However, in recent years, FDI from United States has reduce its relevance within Hidalgo, falling to a share of 23% of total FDI between 2008 and 2017, below the average at national level (43%). Across sectors in the 1999-2017 period, the largest share went to the manufacturing sector (44%), followed by transport (18%) and financial services and insurance (14%). The main subsector in terms of FDI in Hidalgo in the 1999-2017 period was beverages and tobacco, which accounted for 41% of manufacturing FDI. Other states disproportionally attracting FDI in this subsector include comparable states such as Chiapas, Oaxaca and Yucatán.

Ensuring stable, secure and well-paid jobs

Hidalgo's labour market is split between formal and informal segments. The informal sector comprises employment outside legal regulations in formal and informal productive establishments producing legal goods and services (Jütting and de Laiglesia, 2009[23]). The formal sector of Hidalgo absorbed only 24% of total employment in 2017, despite an increase in formal employment of 45% over the 2004-14 period.

Formal employment opportunities are concentrated in service sectors in urban areas

The distribution of the change in formal employment between 2004 and 2013 across municipalities was highly uneven. Out of 110 000 net new formal jobs in the period, almost 30% were concentrated in the adjacent municipalities of Pachuca and Mineral de la Reforma (Figure 1.34). The correlation between employment levels in 2004 and the share in the change in employment growth in 2004-13 was 85%, clearly indicating the consolidation of larger employment centres over the period and the relative loss of importance of thinner labour markets. The spatial distribution of employment creation clearly indicates the attractiveness of the southern corridor in the form of an arch starting from Apan in the southeast, traversing Pachuca in the south centre and ending in Tula de Allende in the southwest.

Most formal employment in Hidalgo remains concentrated in retail trade and manufacturing, despite a significant expansion of non-tradable service activities. Retail trade and manufacturing absorbed each about one-quarter of total formal employment in Hidalgo in 2014 (Figure 1.35). Most activities registered an increase in employment over the period, except for agriculture, electricity and finance, and insurance, further reducing their already small share in total employment. Formal employment creation in service activities was on average more dynamic than the manufacturing sector. Accommodation and food services had the most notable performance across sectors, doubling its level of employment in the 2004-13 period to become the 3rd most important sector in 2013.

Figure 1.34. Distribution of total employment change, Hidalgo, 2004-13
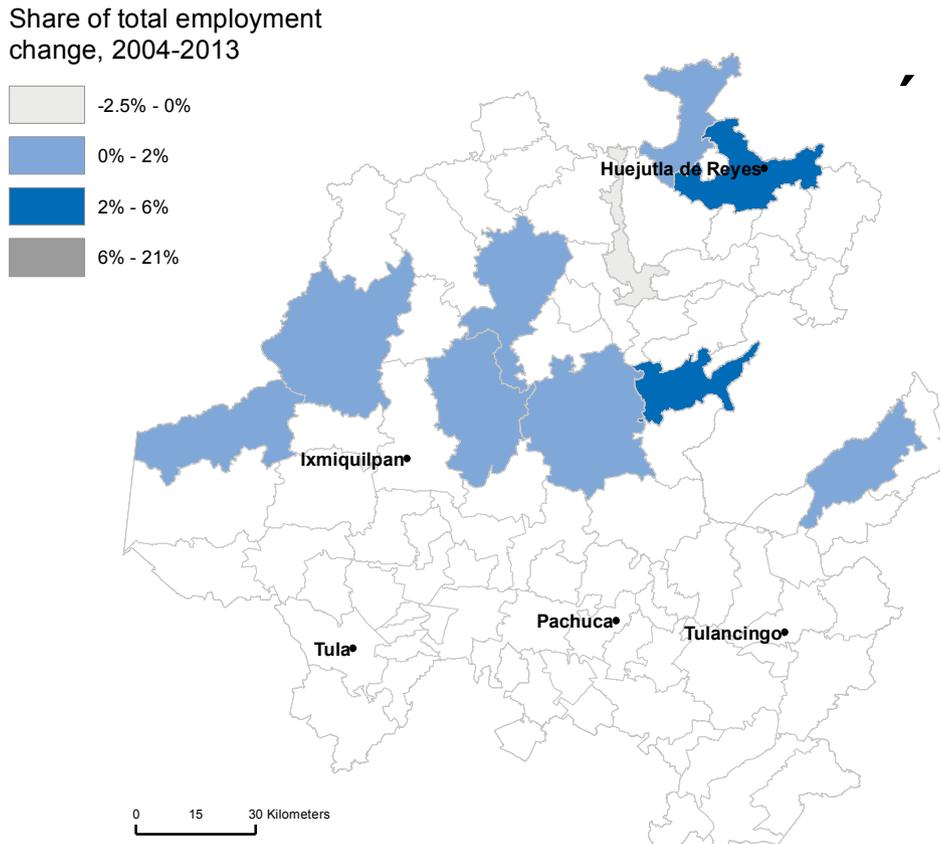
Source: INEGI (2015[19]), *Economic census 2014*.

Nevertheless, the contractual situation of formal workers in Hidalgo has become more precarious over time. Subcontracted employment has rapidly expanded, especially in services. About half of formal employees in 2013 were salaried workers, while 38% were business owners, family and non-salaried workers and 12% were workers without a contractual relationship (a category that captures outsourced employment) (Table 1.3). The share of outsourced employment increased 7 percentage points between 2004 and 2013, while the share of salaried workers decreased 8 percentage points over the same period.

Although outsourced employment is more commonly associated with the manufacturing sector (e.g. as part of processes involving *maquiladoras*), outsourcing levels and growth are larger in the service sector. In particular, one out of three formal workers in the wholesale and retail sector has a non-contractual relationship, which is significant given this sector employs one out of three workers in Hidalgo.

Figure 1.35. Distribution and growth of formal employment by selected economic sectors, Hidalgo, 2004-13
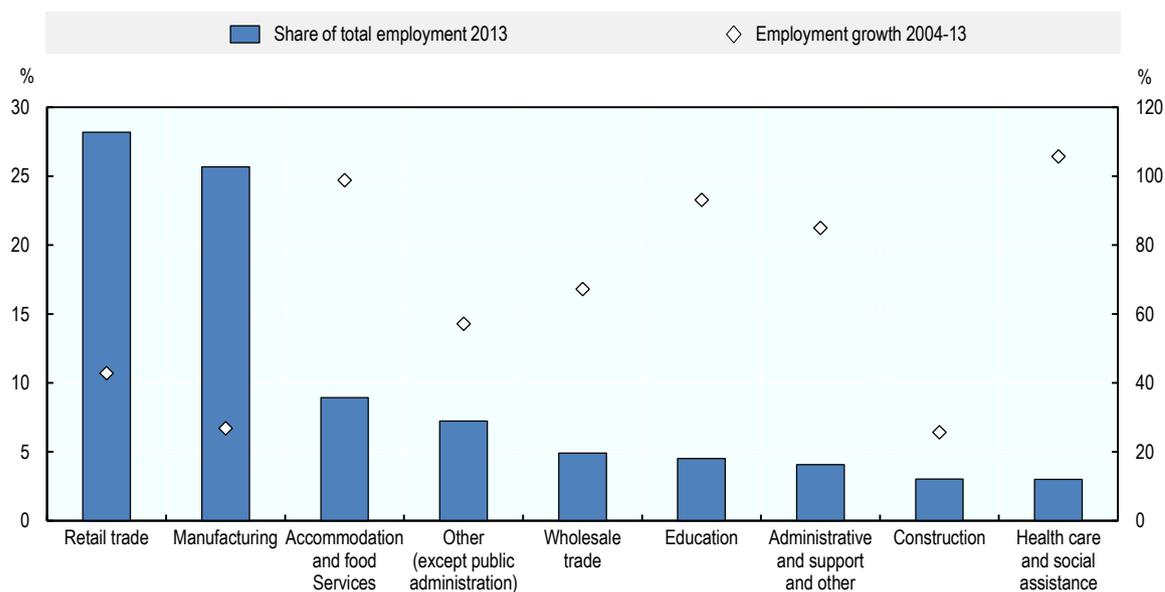
Note: Sectors with a share smaller than 2% not shown.
Source: INEGI (2015[19]), *Economic census* 2014.

Table 1.3. Distribution of formal employment by type of contractual relationship, Hidalgo, 2004-13

	Share in total employment 2013	Share outsourced employment 2013	Difference in share of outsourced employment 2004-13
Agriculture	0.38	0.29	0.29
Mining, utilities and construction	4.86	28.58	10.01
Manufacturing	25.67	18.06	8.47
Wholesale and retail trade	33.10	33.96	22.98
Information, finance, real state, professional and administrative	8.13	55.11	13.68
Other services	24.79	46.54	28.31
Total		**12.08**	**6.7**

Source: INEGI (2015[19]), *Economic census 2014*.

Informality rates diminish slowly due to structural factors

Labour informality in Hidalgo is high for national and Latin American standards and has not significantly decreased in the past decade. In 2017, about 8 out of 10 occupied persons in Hidalgo were informally employed (Figure 1.36). Hidalgo's informality rate is the fourth largest in Mexico, surpassing the national mean by 16.6 percentage points (see Box 1.2 for more explanation on the concept and measurement of informality). The difference with the national average was virtually the same in 2005, indicating the lack of a strong movement from informal to formal employment in the past decade. Hidalgo's informality rate is high for Latin American standards, as the average non-agricultural informality rate across Latin American countries stood at 47%, and it is as high as 70% in Bolivia, Honduras, Paraguay and Peru (International Labour Organization, 2016[24]).

Box 1.2. Concept and composition of the informal sector

The measurement and interpretation of informality in Mexico aligns with the International Labour Organization 2012 guidelines. According to these, informality in the productive sector has two dimensions. The first is related to the type or nature of the economic unit. *Informal businesses* are small, unregistered, home-based businesses producing legal goods and services that do not keep basic accounting records. Employment in informal businesses is catalogued as *informal employment*. The second relates directly to *informal employment* and includes individuals working outside the labour employment protection system of the country for formal or informal businesses.

Mexico uses an analytical tool called the Hussmann matrix that tabulates types of economic units versus the type of contractual relationship and informality status from the worker point of view. This type of classification seeks to encompass traditional informal occupations –,such as working for an informal business unit or being a domestic worker – with other types of informality that also imply more vulnerability and a lower level of social protection, such as working for a formal firm and the government under an arrangement that does not comply with national legislation.

The Hussmann matrix also allows obtaining suitable values for other indicators of informality used in the international context, such as the percentage of informal employment in non-agricultural activities, which would be the sum of workers in informal non-agricultural business units plus non-agricultural workers categorised as informal.

Source: INEGI (2014[25]), México: Nuevas estadísticas de informalidad laboral, (Accessed July 2018) http://www.beta.inegi.org.mx/proyectos/enchogares/regulares/enoe/

Informality levels in Hidalgo are larger than what income levels alone would predict. The correlation between informality rates and GDP per capita across Mexican states is -0.47, suggesting that states should witness decreases in informality rates as they develop (Figure 1.37). The informality rate in Hidalgo is larger than in four states with lower GDP per capita levels. This evidence suggests the existence of structural impediments to the mobilisation of informal workers and firms to the formal sector. These include a high share of microenterprises, the quality of human capital, restrictions on investment and businesses creation, and corruption levels (Dougherty and Escobar, 2013[26]).

Figure 1.36. Informality rate, Mexican states, 2005 and 2017
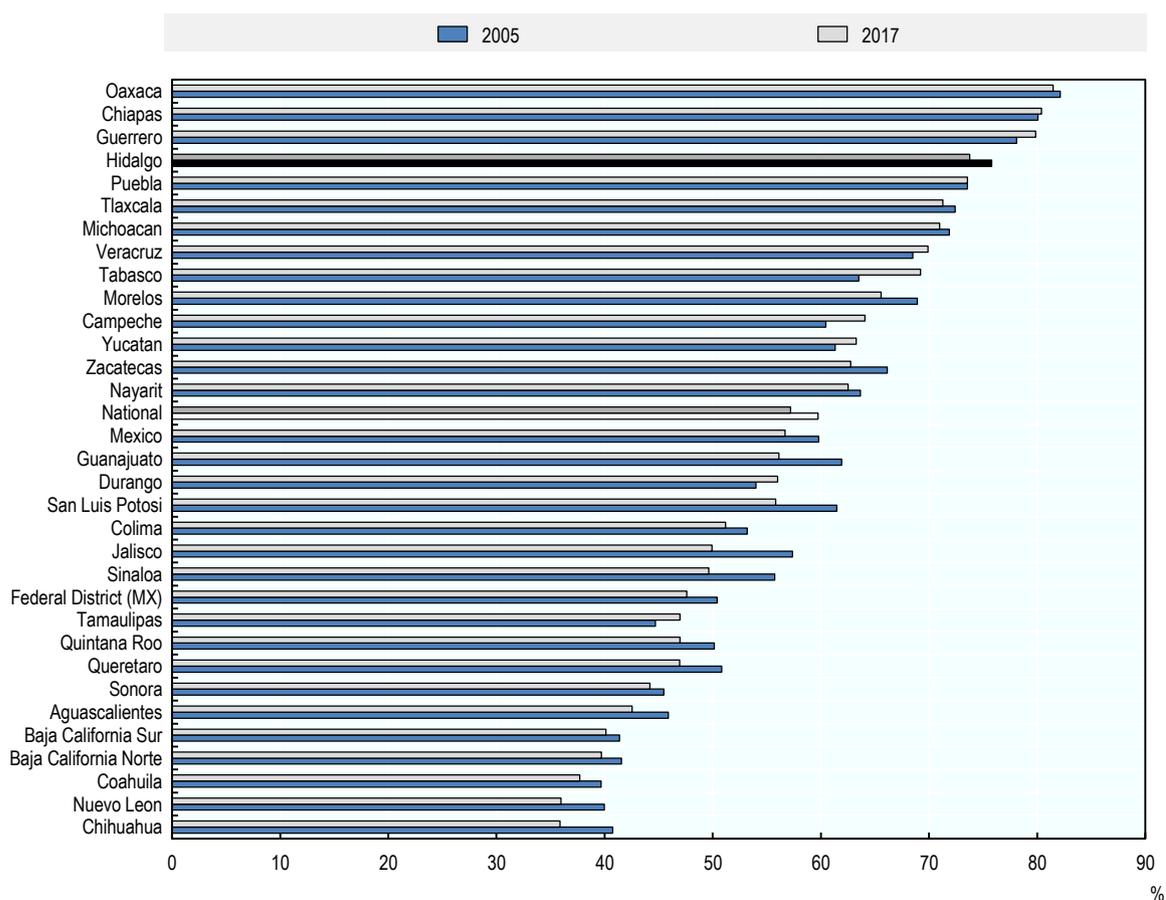
Note: The informality rate is the total occupied workers with informal status over total occupied workers.
Source: INEGI (2017[27]), *ENOE, III-Trimester 2017*; INEGI (2005[28]) 2005-III trimester.

Across municipalities, higher GDP per capita, manufacturing shares and population density correlate with lower informality rates. The three factors can explain half of the variation in informality rates across 40 municipalities with available data (Table 1.4). Increases in population density and GDP per capita are related with similarly lower informality rates: in both cases, a 1% increase is associated with a decrease of 0.04 points in the informality rate. Moreover, more industrialised municipalities display on average lower informality rates: an increase of 1 percentage point of the manufacturing share is related to a decrease of 0.24 points in the informality rate.

Figure 1.37. Correlation between GDP per capita and informality rates, Mexican states, 2015 and 2017
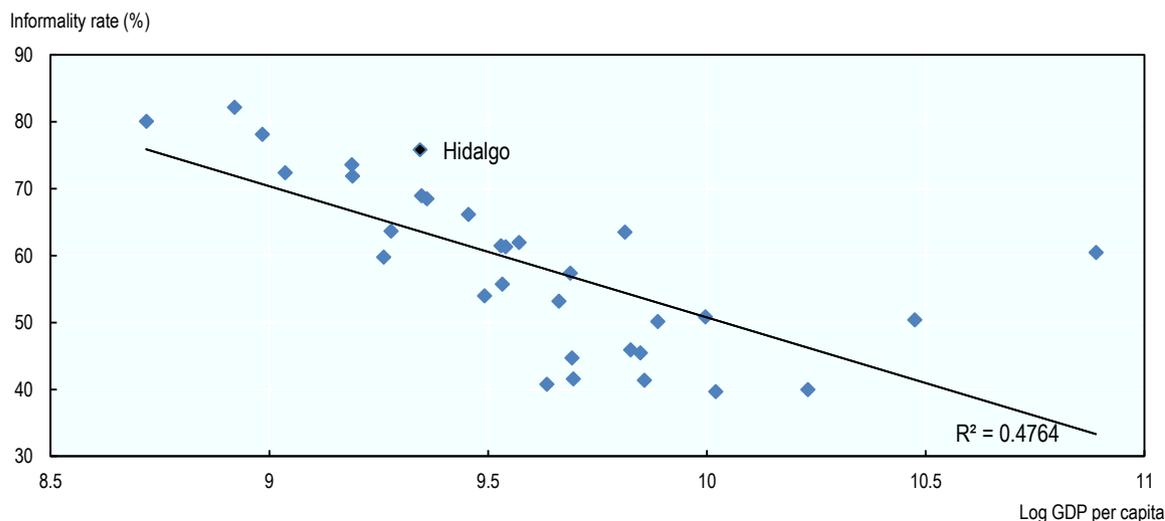
Note: GDP per capita values expressed in natural logarithms.
Sources: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en; INEGI (2017[27]), *ENOE, III-Trimester 2017*.

Table 1.4. Informal employment rates correlates

	Coefficient	Standard error
GDP per capita (ln)	-0.0396**	0.016673
Population density (ln)	-0.0414*	0.023465
Manufacturing share	-0.2402*	0.135484

* $p < 0.1$.
** $p < 0.05$.
Notes: Tobit estimates across 40 observations. Regression includes a constant term (not reported).
GDP per capita and manufacturing rate in 2013 values. Population density in 2015 values. Informality rate in 2017 values. GDP per capita and population density log-transformed.
Dependent variable: Informality rate (Informal workers over total number of workers).
Source: INEGI (2018[29]), *Economic census 2015*.

Across individuals, those younger, less educated and with larger families have a higher probability of being informally employed, and those with tertiary education living in richer municipalities have a lower probability. Having a level of schooling of primary education or less, the number of children and being younger than 25 years old all increase the probability of being informally employed, against the option of being formally employed (see Box 1.3 and Table 1.5 for details). On the other hand, having a tertiary or higher educational level and living in a municipality with a higher income per capita than the state means a decrease in the probability of being informally employed.

Box 1.3. Identifying the determinants of informal status

What kind of worker is more likely to be informally employed?

In a recent study for six Latin American countries, Fernández and co-authors propose a number of variables to explain the probability of being informally employed (as opposed to being formally employed) in each country. For Mexico, the results indicate that having a low level of education, being a married woman, being younger than 25 years old, residing in a rural area and the number of people living in the household are all significantly related to a higher probability of being informally employed. Being a female or being older than 55 do not significantly explain the probability of being informally employed. Fernández et al. also find that having tertiary education or more and residing in more productive cities is also related to a higher probability of being informally employed.

Performing a similar exercise for Hidalgo reveals some interesting results. In line with the national average, being younger than 25, having primary education or less and the size of the household are related with a higher probability of being informally employed. However, in Hidalgo, having tertiary education or more and living in a richer municipality *reduces* the probability of being informally employed, controlling for other factors (Table 1.5).

Table 1.5. Determinants of the probability of informal worker status for individuals, Hidalgo, 2017

Variable	Estimate
Primary education or less	1.097**
	(0.116)
Tertiary education or more	-1.028**
	(0.0775)
Woman	0.174*
	(0.0993)
Number of children	0.111**
	(0.0382)
Younger than 25	1.190**
	(0.116)
Older than 55	-0.105
	(0.103)
Lives in a richer municipality	-1.410**
	(0.116)
Observations	4,456

* $p < 0.1$.
** $p < 0.01$.
Notes: Robust standard errors in parentheses.
Sample includes occupied population only (i.e. excludes non-active and unemployed). Productive municipality is a dummy equal to 1 if the mean income from work of the municipality is larger than the state mean. Constant term included but not reported.
Dependent variable is a dummy equal to 1 if the person is an informal worker.
Sources: INEGI (2017[27]), *ENOE, III-Trimester 2017*. Based on regression design of Fernandez et al. (2017[30]), "Taxonomía de la informalidad en America Latina", http://www.repository.fedesarrollo.org.co/handle/11445/3476.

An informal worker in Hidalgo earns less than a formal worker with similar personal characteristics, occupation, sector of activity and place of residency. In 2017, the average hourly income from work for formal workers was 85% higher than that of informal workers. This difference reflects the fact that formal workers may be more educated, more experienced, work in better-paid occupations and/or work in sectors or live in municipalities that pay higher wages. However, calculating the income from work gap after controlling for all these and other factors, the formal-informal income from work gap between the two types of workers is still significant (Table 1.6). These results indicate that a formal worker earns 13% more per hour worked than a comparable informal worker. This gap can be interpreted as evidence of lower productivity in the informal sector and gives an idea of potential productivity gains from formalisation (Moreno Treviño, 2007[31]). Interestingly, the results on the determinants of income per hour worked also reveal that in Hidalgo a female worker earns 11% less than a comparable male worker.

Table 1.6. Formal-Informal income per hour worked gap estimation, Hidalgo, 2017

Variable	Estimate
Completed primary education (base = unfinished primary)	0.212**
	(0.0535)
Completed secondary education	0.304**
	(0.0529)
Completed tertiary education or more	0.480**
	(0.0564)
Female	-0.114**
	(0.0285)
Informal (base = formal)	**-0.130****
	(0.0307)
Observations	3,285
R-squared	0.311

* $p < 0.1$.
** $p < 0.01$.
Notes: Robust standard errors in parentheses.
Sample includes occupied population only (i.e. excludes non-active and unemployed). Constant term included but not reported. Age and dummies for 40 municipalities, 10 occupational categories and 7 activity sectors included but not reported.
Dependent variable is income per hour worked in natural logarithms.
Source: INEGI (2017[27]), *ENOE, III-Trimester 2017*.

A highly diverse informal sector calls for a set of complementary policies

The informal sector in Hidalgo is highly diverse in terms of profiles and economic sector. Roughly in line with national shares, three out of ten informal workers are own account workers while two in ten are subordinate workers in businesses, institutions and government (Table 1.7). Notably, the share of subordinate informal workers in primary activities is six percentage points higher in Hidalgo compared to the national average. In fact, the bulk of agricultural employment is informal, as the ratio of formal-to-informal workers in primary activities is above eight to one (Table 1.8). While most informal employment concentrates in service sectors, the share of informal employment in the manufacturing sector is almost ten percentage points lower than in the formal sector. The incidence of informality is far smaller in the manufacturing sector compared to the

primary sector, as there are two formal manufacturing workers per every informal manufacturing worker.

Table 1.7. Share of informal employment by category, Hidalgo and Mexico, 2017

Category	Share in total informal, Hidalgo (%)	Share in total informal, National (excl. Hidalgo) (%)
Own account	29.6	34.1
Business owners in informal sector	2.9	3.1
Subordinate workers in informal sector	17.4	15.5
Subordinate workers in businesses, institutions and government	20.8	22.4
Subordinate workers in agriculture	12.5	8.4
Subordinate workers in domestic employment and non-remunerated	16.7	15.8

Source: INEGI (2017[27]), *ENOE, III-Trimester 2017*.

Table 1.8. Number and share of workers by informality status and sector of activity, Hidalgo, 2017

Sector	Informal workers (persons)	Share (%)	Formal workers (persons)	Share (%)	Share informal/Share formal
Agriculture, hunting, forestry and fishing	224 967	25.68	9 509	3.05	8.42
Extractive industries and electricity	2 648	0.3	4 811	1.54	0.19
Manufacturing	127 232	14.52	80 259	25.76	0.56
Construction	101 741	11.61	11 922	3.83	3.03
Wholesale and retail trade	144 960	16.54	50 424	16.19	1.02
Restaurants and hotels	61 822	7.06	8 957	2.88	2.45
Transport, storage and communication	30 686	3.5	18 424	5.91	0.59
Financing, insurance, real estate and business services	25 135	2.87	31 759	10.2	0.28
Social service	22 351	2.55	61 756	19.82	0.13
Diverse services	114 983	13.12	10 489	3.37	3.89
Government and international organisations	18 709	2.14	23 111	7.42	0.29
Others	950	0.11	92	0.03	3.67

Source: INEGI (2017[27]), *ENOE, III-Trimester 2017*.

Large informal sectors such as the one in Hidalgo are highly diverse in terms of worker profiles. In a typical region in Latin America, workers with extremely low levels of education and qualification earning only a fraction of the minimum wage can be found side by side highly educated workers earning more than the median formal wage (Günther and Launov, 2012[32]). Workers of different profiles have different reasons and motivations to be and stay informally employed. A key challenge for target policies is the difficulty in identifying the reasons behind informality, which include both observed (e.g. level of education) and unobserved characteristics (e.g. motivation and need for work flexibility).

The identification of segments within the informal sector can guide the design of targeted policies. One categorisation of informal employment identifies three types of informality

based on the level of income and the educational level of workers (Fernandez et al., 2017[30]) (Figure 1.38). The first type is *subsistence informality*, grouping workers earning only a fraction of the minimum wage (bottom left quadrant in Figure 1.26). Subsistence workers typically have little demonstrable experience and low levels of productivity and are highly unlikely to transition to higher paying formal jobs and is at high risk of poverty and social exclusion. The second type, *mixed informality*, groups workers with low educational levels and comparable levels of income from work to formal workers. The third type is *induced informality*, comprising workers with low earnings and high educational levels. The explanation for the informal status in this group may be more related with personal or circumstantial reasons (e.g. difficult access to jobs, discrimination from employers based on personal characteristics or preference for flexible hours) than with productivity differences.

Figure 1.38. Types of informality and policy options
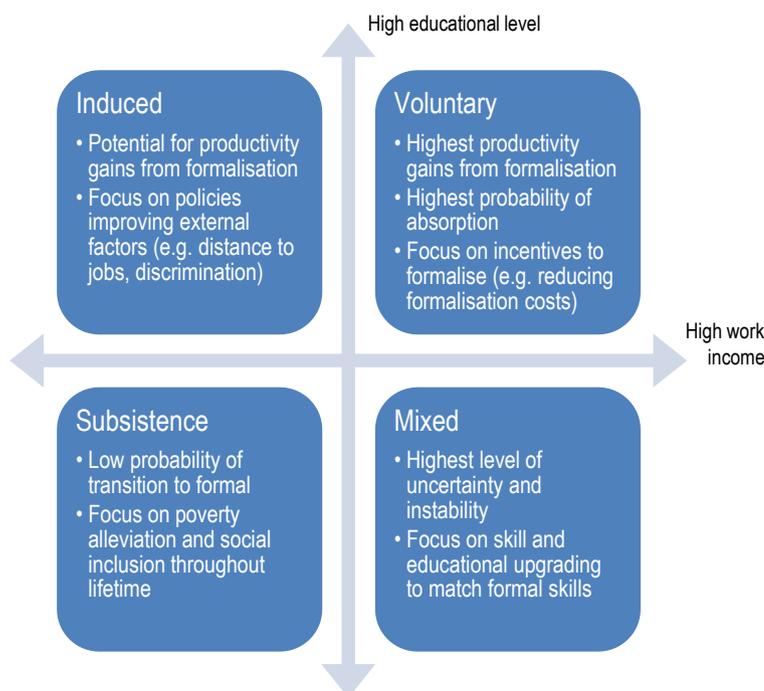
Source: Elaboration based on Fernandez et al (2017[30]), *Taxonomía de la Informalidad en America Latina*, http://www.repository.fedesarrollo.org.co/handle/11445/3476.

Most informal workers in Hidalgo face a high risk of poverty and exclusion. The split of individual informal workers by educational level and earnings reveals that one-third of informal workers belong to the "subsistence" category with average work earnings are less than half a minimum wage per month (Table 1.9). At the other end of the spectrum, about half belong to the "voluntary" or "induced" category as earnings per month are above one minimum wage per month. In terms of educational attainment, four in ten workers have completed up to primary school, and two in ten have completed tertiary education or higher levels. The subgroup of informal workers at the highest risk of poverty and exclusion which account for 16% of all informal workers (around 185 000 workers) comprises workers that have completed only primary education and earn half a minimum wage.

Table 1.9. Classification of informal workers according to educational and monthly income from work levels, Hidalgo, 2017

Income/education	Less than half minimum wage (%)	More than half and less than one minimum wage (%)	More than one minimum wage (%)	Risk of poverty and exclusion
Low (Primary)	16.1	6.7	16.9	Very high
Medium (Secondary)	11.1	5.6	24.1	High
High (Tertiary or more)	6.1	1.7	11.6	Medium
Type of informality	Subsistence	Mixed	Induced/Voluntary	

Note: Income refers to nominal monthly income from work. Minimum wage level set at MXN 2 400 (official daily minimum wage for 2017 was MXN 80.04).
Source: INEGI (2017[27]), *ENOE, III-Trimester 2017*.

Workers in different informal categories are likely to respond differently to policies. Subsistence workers are unlikely to benefit from regulatory or institutional improvements leading to more formal job creation, as they would be likely outperformed when competing for low-skill formal jobs. This group is also at the highest risk of social exclusion because of their disadvantageous situation in the labour market and their low levels of income from work. Workers in the mixed category face a high risk of falling under the subsistence category, as their skill and educational levels make them relatively uncompetitive in the labour market. Workers in this group are likely to benefit from targeted skill upgrading and educational programmes that allow them to compete for formal jobs. Finally, workers in the induced/voluntary category could benefit from improvements in barriers to labour hiring, including excessive burdens on formal firms, as well as focal policies to bridge the spatial separation of low-income workers residencies and formal jobs. Given that workers in this group have relatively high levels of education and qualifications, their inclusion in the formal sector is likely to translate into productivity gains for the economy.

Reducing poverty, ensuring access and improving well-being

Lifting people out of poverty and deprivation is a pressing need

Most of the Hidalgo's population needs to be lifted out of poverty and deprivation. Half of the state population is in poverty according to a multi-dimensional poverty rate that considers both income and deprivation in terms of access to education, health, housing, and food security. Hidalgo has the 9th largest poverty rate across 31 states and the former Federal District (now Mexico City) in Mexico. In 2016, Hidalgo had similar levels to Morelos and Tabasco.

Structural trends may be in favour of further poverty reduction in Hidalgo. Between 2014 and 2016, the state's poverty rate decreased by around 4 percentage points. Currently, it is around six percentage points below the national average. Poverty rates are much higher in southern states of a comparable economic size such as Chiapas and Oaxaca. This geographical divide in poverty rates is likely to be persistent, as it is related to structural factors such as the difference in exposure to trade (Hanson, 2007[33]). Although Hidalgo has one of the highest poverty rates amongst states located in the north of Mexico, unlike southern states it is likely to benefit from structural trends in poverty reduction due to its geographic location.

Figure 1.39. Poverty rates, Mexican states, 2014-16
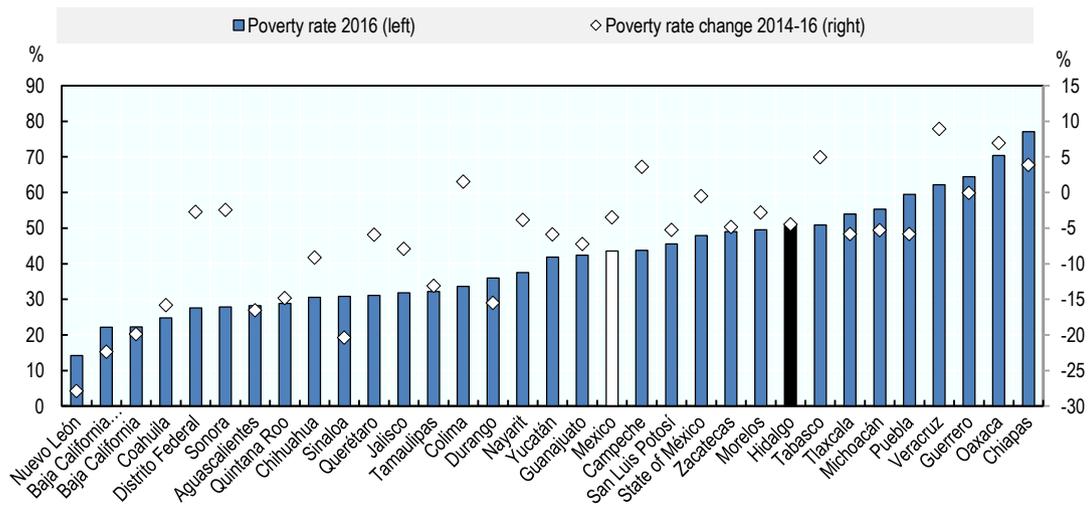
Note: Poverty rates weight income and level of deprivation in terms of education, health, housing and food security. Subsistence lines are set to MXN 1 857 in rural areas and MXN 2 858 in urban areas.
Source: CONEVAL (2017[34]), *Poverty Measurement*, https://www.coneval.org.mx/Medicion/Paginas/Pobrez aInicio.aspx.

Extreme poverty in the state is located geographically in rural areas.[3] Out of the population in poverty, 8% of the population (about 234 000 people) are in extreme poverty. On top of this group, 31.9% of the population with above subsistence income experience deprivation, leaving a minority of 12.8% of the population in a no poverty, no deprivation situation. The north concentrates the municipalities with the highest poverty rates (Figure 1.40). Extreme poverty in non-metropolitan areas stands at 13% of the population, far above the 3% in metropolitan areas. Some low densely populated municipalities in the north such as Tepehuacán de Guerrero, Xochiatipan and Yahualica have more than 80% of the population living in poverty, a child mortality rate of 20% and more than one-third of their population experience deprivation in terms of access to food.

Whereas a successful transition away from agriculture and informality can lead to poverty reduction, poverty in low-density areas is likely to persist. Across municipalities in Hidalgo, poverty rates are higher in lower density municipalities with an agricultural vocation and higher informality rates (Figure 1.41). Remote places concentrate more poverty (compare Figure 1.15 and Figure 1.40). The structural change towards higher productivity activities has a potentially powerful impact on poverty through its positive effect on work incomes. However, areas with low accessibility, extremely high levels of informality and agricultural work will be the last to experience the benefits of this channel if they cannot accelerate the transformation of their productive bases. The existence of spatial poverty traps further affects the unequal effect of structural change on poverty reduction as they create vicious circles that exacerbate territorial inequalities (Bird, Higgins and Harris, 2010[35]).

Figure 1.40. Share of population in extreme poverty by municipality, Hidalgo, 2015
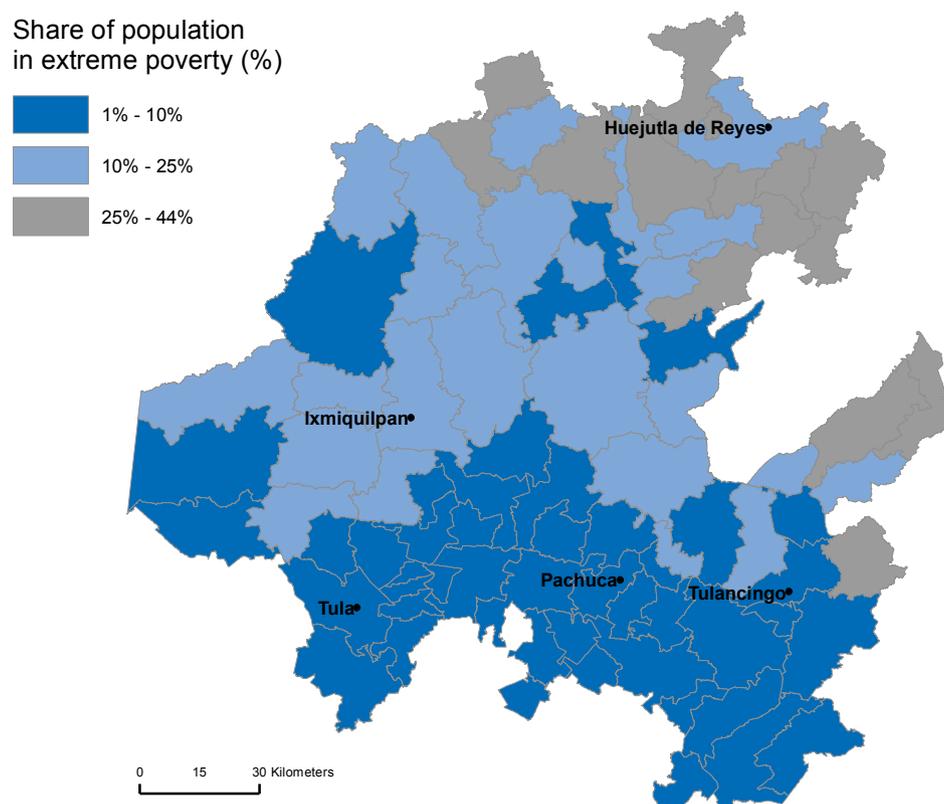
Note: Extreme poverty is based on CONEVAL definition: a person is in a situation of extreme poverty when he has three or more deficiencies, of six possible, within the Index of Social Deprivation and that, moreover, is below the minimum welfare line.

Source: Calculations based on CONEVAL (2015[36]), *Poverty Measurement by Municipality*, https://www.coneval.org.mx/Medicion/Paginas/PobrezaInicio.aspx.

Figure 1.41. Poverty rates versus informality rates, share of workers and agriculture and population density by municipality, Hidalgo, 2015 and 2017
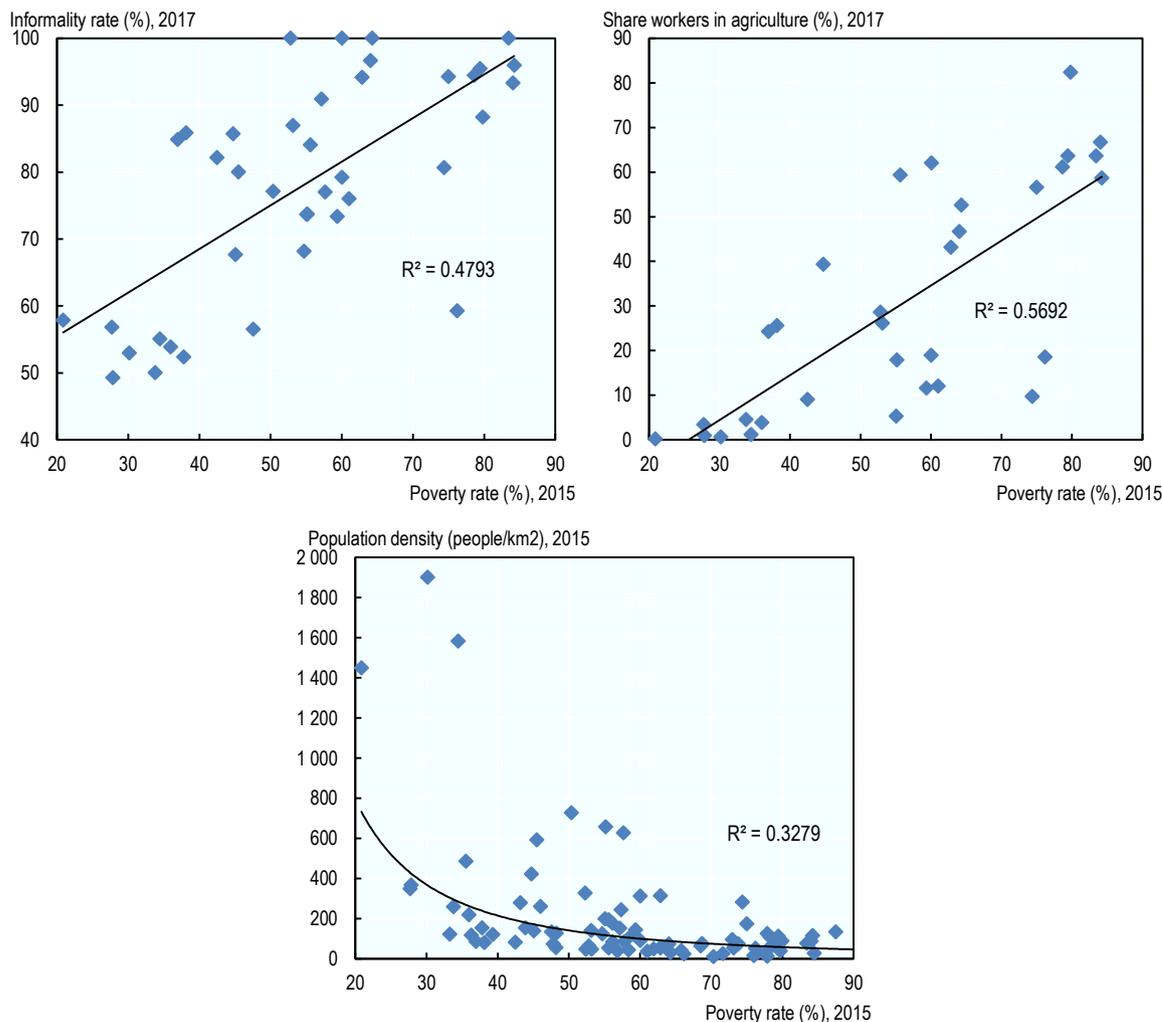
Note: Poverty rates weight income and level of deprivation in terms of education, health, housing and food security. Subsistence lines are set to MXN 1 857 in rural areas and MXN 2 858 in urban areas.

Municipalities with higher informality rates, more workers in agriculture and lower density have higher poverty rates.

Source: INEGI (2017[27]), *ENOE, III-trimester 2017*; CONEVAL (2015[36]), *Poverty Measurement by Municipality*, https://www.coneval.org.mx/Medicion/Paginas/PobrezaInicio.aspx.

Improving well-being and equity requires ensuring proper access to basic services

Recent economic gains have still to translate into improvements in well-being, especially with respect to life satisfaction and housing provision. Comparing regional well-being indicators across OECD regions (see Box 1.4) shows that Hidalgo's rank in terms of the environment, life satisfaction, civic engagement and jobs is par with average performance across OECD regions (Figure 1.41). Similar regions in terms of well-being across OECD countries include Maule (Chile), East Macedonia–Thrace (Greece), Sicily (Italy) and North-Eastern Anatolia (Turkey).

Box 1.4. OECD regional well-being indicators

Building comparable well-being indicators at a regional scale

The OECD framework for measuring regional well-being builds on the Better Life Initiative at the national level. It goes further to measure well-being in regions with the idea that measures at local level represent a more meaningful indicator. Besides place-based outcomes, it also focuses on individuals, since both dimensions influence people's well-being and future opportunities.

In line with national well-being indicators, regional well-being indicators concentrate on informing about people's lives rather than on means (inputs) or ends (outputs). In this way, the well-being features can be improved directly by policies. Regional well-being indicators also serve as a tool to evaluate how well-being differs across regions and groups of people.

Regional well-being indicators are multi-dimensional and include both material dimensions and quality of life aspects. Whenever possible, as in the case of Mexican states, self-reported experiences of well-being (subjective indicators) are also included. They also recognise the role of citizenship, institutions and governance in shaping policies and outcomes.

Although well-being dimensions are measured separately, the aim of the regional well-being framework is to allow for comparisons and interactions across multiple dimensions to account for complementarities and trade-offs faced by policymakers. At the same time, the comparison on regional well-being indicators over time allows comparing the dynamics of well-being over time, as well as the sustainability and resilience of regional development.

Regional well-being in Mexico is measured using 12 well-being dimensions: income, jobs, housing, health, access to services, education, civic engagement and governance, environment, life satisfaction, and safety – for which there are comparable statistics at the regional level – and three 3 dimensions: work-life balance, community (social connections) and life satisfaction – for which in the OECD database are available only at national level for lack of comparable data at the sub-national level. Table 1.10 details the indicator used for each dimension.

Table 1.10. Indicators by well-being dimension, Hidalgo

Environment	
Level of air pollution in PM 2.5 (µg/m³), 2013	
Community	
Perceived social network support (scale from 0 to 10), 2013	
Life Satisfaction	
Life satisfaction (scale from 0 to 10), 2013	
Civic engagement	
Voters in last national election (%), 2015 or lastest year	
Jobs	
Employment rate (%), 2014	
Unemployment rate (%), 2014	
Safety	
Homicide Rate (per 100 000 people), 2013	
Housing	
Rooms per person, 2013	
Health	
Life Expectancy at birth (years), 2013	
Age adjusted mortality rate (per 1 000 people), 2013	
Access to services	
Households with broadband access (%), 2014	
Education	
Labour force with at least upper secondary education (%), 2014	
Income	
Disposable income per capita (in USD PPP), 2013	

Sources: OECD (2015[37]), *Measuring Well-being in Mexican States*, http://dx.doi.org/10.1787/978926424607 2-en; OECD (2014[38]), *How's Life in Your Region?*, http://dx.doi.org/10.1787/9789264217416-en; OECD (2018[39]), *OECD Regional Well-Being Database*, www.oecdregionalwellbeing.org.

Across Mexican regions, Hidalgo is a top performer in safety and health indicators. However, the state performs worse than other states in terms of life satisfaction, housing, access to services and income indicators, indicating that there is room to further translate economic growth gains into higher well-being across social groups. It is worth noting that job performance here is measured by employment and unemployment rates that do not capture sub-employment and informal employment.

Figure 1.42. Well-being indicators, TL2 Mexican regions, 2015
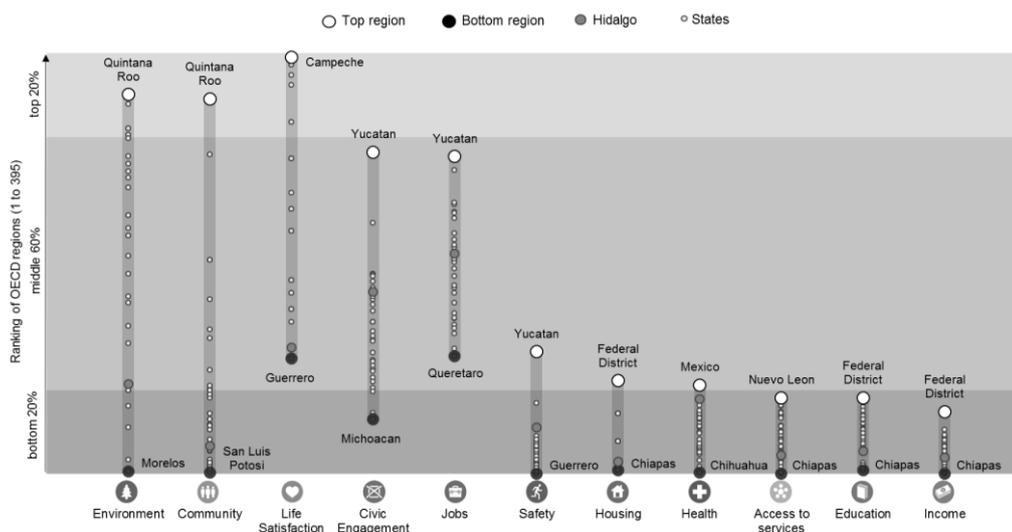
Note: OECD 34 weighted average.
Source: OECD (2018[39]), *OECD Regional Well-Being Database*, www.oecdregionalwellbeing.org.

Hidalgo ranks above the average of Mexican states in security. Hidalgo's homicide rate in 2015 was 8 deaths by homicide per 1 000 inhabitants, less than half of the national average of 17 (Figure 1.43). Homicide rates in Hidalgo are at similar levels to neighbouring states of Querétaro and Tlaxcala, and are below those of Veracruz and Puebla, despite a worsening on this security indicator between 2010 and 2015. Hidalgo ranks fourth across Mexican states in terms of security perception (Figure 1.44). In 2017, 43.3% of the population older than 15 years old declared they felt safe in the state, a similar share than in 2011.

Figure 1.43. Homicide rate, Hidalgo and selected TL2 Mexican regions, 1990-2015
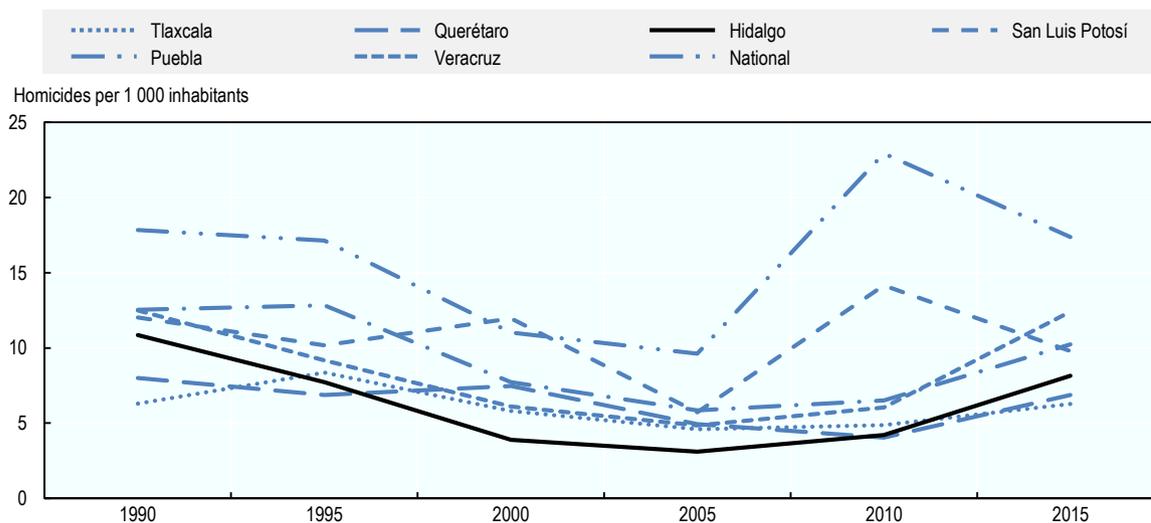
Sources: INEGI (2018[40]), *Mortality: Deaths by Homicide*, http://www.inegi.org.mx/sistemas/olap/proyectos/bd/continuas/mortalidad/defuncioneshom.asp?s=est; INEGI (2018[41]), *Population by Federative Units*, http://www.beta.inegi.org.mx/temas/estructura

Figure 1.44. Safety perception, TL2 Mexican regions, 2011 and 2017
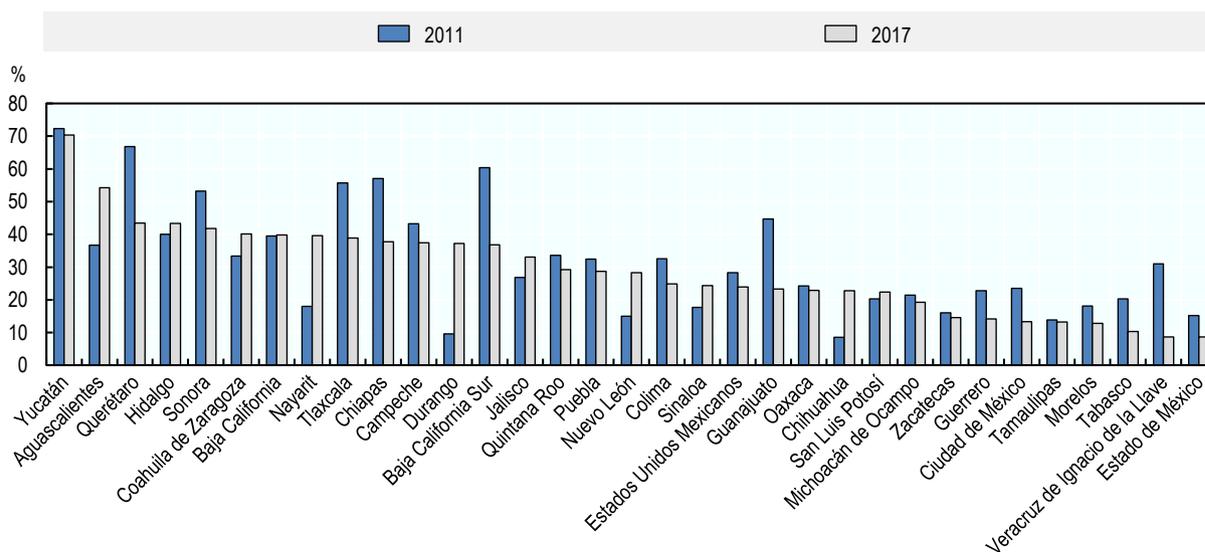
Note: Higher values indicate a higher share of the state population older than 15 years who feel safe.
Source: INEGI (2018[42]), *National Survey of Victimization and Perception of Public Safety (ENVIPE) 2017*.

Large inequalities in access to health services imply that a significant share of the population does not have proper access to health services. Hidalgo has one of the lowest mortality rates across Mexican states, and a life expectancy of 74.3 years, 2 years less than the maximum of 76 years across Mexican states. However, these indicators do not fully reflect inequalities in access and provision. While 82% of the population of the state is affiliated to the health system (the bulk of which is public), this percentage can be as low as 30% across municipalities (INEGI, 2017[43]). Across the territory, while 18% of the population does not have access to a hospital within a 1-hour drive, 8.3% can access up to 4 hospitals within the same time (Table 1.11). Access to health facilities is even limited for the more numerous health centres scattered across the state for a portion of the population living in remote areas. In total, 20 606, 34 251 and 53 263 people do not have access to a health facility within a 30-, 45- and 60-minute car journey.

Table 1.11. Accessibility to hospitals within a one-hour drive, Hidalgo, 2017

Number of hospitals	Number of localities	Number of people	Population (%)
0	223	483 888	18.1
1	443	921 272	34.4
2	120	213 059	7.9
3	580	838 872	31.3
4	144	223 254	8.3

Sources: Open Street Maps (2018[18]), database (Accessed July 2018) https://www.openstreetmap.org INEGI (n.d.[17]), *Conjunto de Datos Vectoriales de Carreteras y Vialidades Urbanas Edición 1.0 (Distribución por E ntidad Federativa),* http://www.inegi.org.mx/geo/contenidos/topografia/vectoriales_carreteras.aspx..

Inequalities in access to education reinforce the effect of inequalities in access to economic opportunities and lead to widening regional gaps. A significant share of young people in Hidalgo has restricted access to educational opportunities (Figure 1.45). Young people in some localities in northern regions cannot access any school within a 1-hour

drive, while young people in localities with high access can access up to 148 secondary schools within a 1-hour drive. Young people in localities with low accessibility are likely to relocate in search for schooling opportunities or drop the schooling system altogether. In either case, the effect of such restricted access to schooling is an increase in regional disparities, as localities with low access are drained from young educated workers.

Figure 1.45. Accessibility to upper secondary schools, Hidalgo, 2017
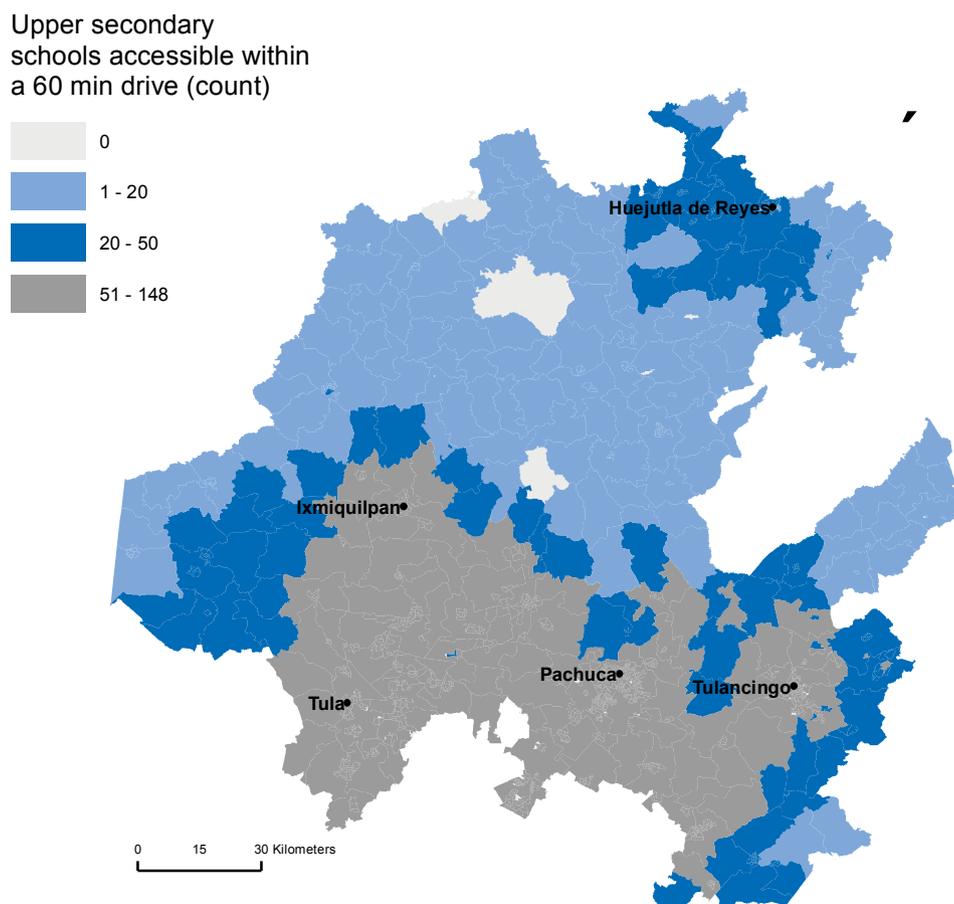
Note: Units represent the total number of schools accessible within a 60-minute drive threshold. Within a 60-minute drive through the existing road network.
Sources: SEP (n.d.[44]), *Sistema Nacional de Información de Escuelas*, http://www.snie.sep.gob.mx/SNIESC/; Open Street Maps (2018[18]), database (Accessed July 2018) https://www.openstreetmap.org INEGI (n.d.[17]), *Conjunto de Datos Vectoriales de Carreteras y Vialidades Urbanas Edición 1.0 (Distribución por E ntidad Federativa),* http://www.inegi.org.mx/geo/contenidos/topografia/vectoriales_carreteras.aspx.

Closing physical access gaps with remote access in Hidalgo will require substantial expansion of the information and communications technology (ICT) infrastructure. In 2017, 67% of households in Hidalgo lacked an Internet connection, a higher percentage than the national average of 49.1% and far above the share of Mexico City where only one-quarter of households lack an Internet connection (INEGI, 2017[45]). On the same year, about six out of ten households in reported not having a computer at home. Ensuring wider Internet coverage through investments across the territory presents opportunities for the next generation, as young people represent a larger share of Internet users than

across the average of states in Mexico – the share computer users in the 6-17 age range is 41%, 7 percentage points higher larger than national mean of 34.1%.

Concluding remarks

The evidence reviewed in this chapter suggests that in Hidalgo there is room for productivity improvements. These improvements can stem from structural change away from low productivity services and towards higher value-added, higher productivity tradable services, such as the information related activities. Hidalgo needs to diversify its economic structure towards less volatile sectors in the near future. Further analysis of the specialisation patterns and trends in the manufacturing sector can help understanding if future expansions of the manufacturing sector in Hidalgo will effectively translate into more manufacturing jobs with at least the same intensity.

The assessment of this chapter indicates the need for urgent and aggressive innovation policy action to tackle the increasing technological gap and pave the way for a transition to higher technology sectors. Furthermore, improving conditions in the labour market will require the design of tailored incentives for informal workers of different socio-economic profiles.

Notes

[1] A local area is the local administrative unit considered as the smallest building block for the classification. Being administrative entities, the average size of local administrative unit can change significantly across countries.

[2] The index of Geographic Concentration of population or businesses is defined as:
$\sum_{i=1}^{N}(|p_i - a_i|/2) * 100$, where p_i is the population/businesses share of municipality i, a_i is the area share of municipality i.

[3] According to CONEVAL, a person in extreme poverty is when he does not meet three or more indicators, of six possible, within the Social Deprivation Index and which, moreover, is below the minimum welfare line. People in this situation have such a low income that, even if they dedicate it completely to the acquisition of food, they could not acquire the necessary nutrients to have a healthy life.

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Annex 1.A. Benchmarking Hidalgo

In an increasingly globalised economy, regions with similar initial levels of economic development and economic size face similar capacity restrictions in terms of economies of scale and productive capacity.

In this context, the share of manufacturing is indicative of the relative importance of tradable goods and the exposure of the region to international changes in the demand for manufactures. Evaluating the performance of Hidalgo over time with respect to regions that had similar initial levels is therefore indicative of the relative performance of the region in the global arena.

Following this, the selection of a group of comparable regions across more than 700 OECD regions is based on similarity in 3 criteria: i) initial economic development, as measured by GDP per capita in 2003; ii) initial market size, as measured by total population in 2003; and iii) initial relative importance of manufacturing, as measured by the share of GVA in manufacturing in 2004. The range to establish similarity was set to between half and double of Hidalgo's 2003 values.

Annex Table 1.A shows the resulting group of comparable regions, excluding two regions in Brazil for which there was no information available on employment and GVA. The group include the Central Mexican regions of Querétaro and Morelos, which share with Hidalgo the proximity to the Mexico State and Federal District, as well as six other Mexican regions of similar size and manufacturing vocation. Across other OECD countries, the comparable regions include 13 regions located in East European countries and a Baltic region involved in Global Value Chains in manufacturing.

Annex Table 1.A.1. Comparable regions to Hidalgo in terms of selected initial conditions

Country	Name	Population	GDP per capita 2003	Share of manufacturing. in GVA 2004 (%)
Mexico	**Hidalgo**	**2 456 380**	**8 773**	**33.8**
	Baja California Norte	2 775 930	16 694	22.0
	Chihuahua	3 165 450	12 880	22.2
	Durango	1 540 260	11 884	23.0
	Morelos	1 648 430	11 321	21.6
	Querétaro	1 636 560	14 539	31.5
	San Luis Potosí	2 445 010	10 248	26.1
	Sonora	2 416 530	14 744	18.6
	Yucatán	1 797 320	11 246	17.7
Czech Republic	Moravia-Silesia	1 256 300	17 333	20.4
Hungary	Northern Hungary	1 288 960	12 593	23.4
	Northern Great Plain	1 554 180	13 025	22.1
	Southern Great Plain	1 367 060	13 550	18.1
Romania	North West	2 750 410	11 580	24.8
	Centre	2 548 330	12 646	29.7
	North East	3 746 330	8 537	22.7
	South East	2 863 410	10 719	22.3
	South - Muntenia	3 368 620	9 938	29.4
	South West Oltenia	2 336 020	10 182	20.1
	West	1 951 520	13 527	22.2
Slovak Republic	West Slovak Republic	1 862 510	16 595	17.0
	Central Slovak Republic	1 353 030	14 668	17.1
Lithuania	Lithuania	3 431 500	15 002	17.3

Source: OECD (2018[7]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Annex 1.B. Assessing accessibility to cities, markets and services

Accessibility can be defined as the easiness with which people in different locations can physically access markets, for goods, services and employment and business opportunities (Geurs and van Wee, 2004[46]). Access to cities is the time (in minutes) it takes to reach a city of at least 50 000 inhabitants. At the level of municipality, access to a city refers to the median time needed to reach the closest city (within or outside the state borders) calculated from 1 km^2 impedance values. A city is defined as "contiguous cells with a density of at least 1 500 per km^2 or a density built up greater than 50% and a minimum population of 50 000 inhabitants" (Weiss et al., 2018[16]). The impedance travel grid summarises the availability of roads, railroads, waterways and topographical conditions. Journey times summarise how long it takes to reach a location using the most efficient route and the fastest mode available at every grid cell. For more details on the impedance grid see Weiss et al (2018[16]).

Another common measure of accessibility is the cumulative opportunity (CO) index, which measures how many opportunities (people, schools, hospitals, etc.) can be reached under a certain commute threshold using a certain transportation mode. Ideally, accessibility should consider all transportation modes, especially where a large percentage of the population does not have access to a vehicle. However, comprehensive public transport information is not available for the case of Hidalgo. In the CO index, the estimated travel times between each locality (*localidad*) refer to shortest-path travel times by car using the existing road network.

Three measures of "opportunity" by locality are defined based on the Origin-Destination matrix with travel times between localities in Hidalgo. The first is the number of people, which also includes localities in the southern edge of Hidalgo. The measure of accessibility to people is then the percentage of the total population accessible in reachable localities in Hidalgo, the state of Mexico and Mexico City. The second opportunity measure is the number of upper secondary schools aggregated by locality from precise point-co-ordinates. The third opportunity is health facilities, split between hospitals and health centres, also summed by locality from precise point co-ordinates.

The last step involves calculating the index for commuting times below a 60-minute threshold. For every locality Y, the CO index answers the question: how many opportunities can a person reach after commuting by car for 60 minutes from locality Y in every possible direction using the existing road network?

Chapter 2. Towards a more prosperous and competitive Hidalgo

In response to the new signs of opportunity for tackling Hidalgo's economic challenge, the newly elected executive of the state of Hidalgo implemented in 2016 some reforms to reignite Hidalgo's economy. Most of this chapter analyses the steps taken, their implementation and, where possible, the results that can already be observed. It highlights the lessons and benchmarks that can be learnt from Hidalgo's experience, and formulates some assessments and recommendations for Hidalgo based on the experiences of other OECD members.

Key findings

1. Conditions may be right for the establishment of a more prosperous and competitive Hidalgo. Road infrastructure improvements that facilitated the state's accessibility together with a surge of modern economic reforms have attracted foreign investments and are opening the way to a potential wave of opportunity for Hidalgo's economy. However, policy must aim to improve enabling factors to attain a sustained economic growth in the long run.

2. Hidalgo is less focused on tradable activities than the national average. The state shows, however, a higher concentration in the manufacturing sector with little prominence of other tradable sectors, such as information activities.

3. The foreign direct investment in Hidalgo is more diverse in origin than at the national level. With a lower prominence of United States investment than at the national level, Hidalgo has the opportunity to build a position within a relatively more "global" industrial value chain.

4. Hidalgo could further benefit from the consolidation of Mexico within the global value chains (GVC). Its link with the foreign market is mainly driven by intermediate products, rather than final high-value-added products.

5. Hidalgo has hence untapped opportunities to increase its transition towards tradable and productive activities in the service sector such as information or logistics. In terms of manufacturing, the state can increase productivity in subsectors with large workforce such as the textile and food industries.

6. Hidalgo's economic development policy is based on a well-thought-out plan that aims to improve the current business environment, promote new local and foreign investment and support innovation in specific strategic sectors.

7. The implementation of the state's economic development plan can better link the competitive advantages with local realities, especially in northern municipalities. As Hidalgo is faced with a highly imbalanced distribution of its economic activity, the economic plan should be implemented with a place-based approach to reduce such a divide.

Enabling factors

1. The south part of Hidalgo is well connected through physical infrastructure. However, northern municipalities lack paved roads, rail and port connections. The whole territory lags behind in terms of information and communications technology (ICT) infrastructure. This issue has however been set as a high priority for the new administration.

2. The entrepreneurial support policy in Hidalgo lacks a strategic view aligned with the economic plan and that integrates funding mechanisms, soft assistance programmes, incubators and new foreign direct investment (FDI) investments. A strategic view will also strengthen the approach to entrepreneurship policy as an instrument to achieve broader socio-economic goals rather than just a key element for science and technology priorities.

3. Basic education in Hidalgo performs well both in coverage and quality. However,

there is a mismatch between graduates from higher education and the local labour market, which translates into a lack of highly skilled workforce for local firms. In addition, incentives for strengthening the link between higher education institutions and private firms is deficient, which represent a bottleneck for a more dynamic innovation system.

4. Hidalgo is lacking a holistic innovation policy that goes beyond science and technology and sets strategic priorities. The innovation performance of Hidalgo in the national and international context is relatively poor and has not improved over time.

5. The new law of public-private partnerships (PPPs) in Hidalgo goes in the right direction to provide a sound legal PPP framework. It can further benefit from establishing a clear strategy to co-ordinate PPP projects across the level of governments.

6. Informal business represents the vast majority of the economic entities in Hidalgo (85%), which affects its economic growth through a systematic under-optimisation of local human and business capital. This phenomenon is largely explained by structural problems in the economy, but specific measures targeted to microfirms and in co-ordination with the federal government can contribute to reducing it.

Implementation of policy complementarities

1. Hidalgo's economic strategy aims to mobilise the new strategic sectors and improve the state's competitiveness by focusing on four main factors: cost, quality, innovation and value creation. However, to address the productivity challenge over time, the economic strategy of the state requires an incremental approach strategy to improve key enabling factors: infrastructure, human capital, business ecosystem, innovation as well as integrated regional policy.

2. Hidalgo's economic strategy aims to promote clusters around the five strategic sectors. The policy approach requires a better integration within the whole-innovation strategy for the state.

3. The flagship industries that have been chosen for Hidalgo's special economic zone (SEZ) depend on the existing industrial base already in place in the area. It should benefit from a clearer strategy to measure outcomes and complement the socio-economic and institutional conditions of the state.

Introduction

The state of Hidalgo has long experienced economic stagnation, although since the 2008-09 international crisis the economy has been gaining strength. Recent changes in the business ecosystem, regulation and investment conditions have given new momentum to the state's economy.

Over the last decade, Hidalgo had only managed to make some slow gradual improvements in terms of gross domestic product (GDP) per capita. Between 2003 and 2014, GDP per capita grew somewhat above the national average in Hidalgo, slowly closing up the gap with national standards. Notwithstanding this, in 2014, the state of Hidalgo contributed to only 1% of Mexico's national gross value added (GVA) and

generated 1.6% of national employment (INEGI). This is despite the state accounting for 2.2% of the country's working-age population (2015). Of this GVA, total investments registered that year amounted to 3.6% of the state's value-added, a participation lower than that observed at the national level of 9.2%. In 2014, gross fixed capital formation, which captures increased (productive) investments in assets and inputs, totalled MXN 1 128 million, 2.06% of the value added generated in Hidalgo, also lower than that registered at the national level of 9.03%.

Despite this scenario, Hidalgo's current administration has recently managed to consolidate important investment projects in strategic sectors such as the electric automobile industry and food industry. These recent changes have been accompanied by the introduction of a new approach to stimulate the state's economic development.

In response to the new signs of opportunity for tackling Hidalgo's economic challenge, the new administration of the state of Hidalgo implemented in 2016 some reforms to reignite Hidalgo's economy. Most of this chapter analyses the steps taken, their implementation, and where possible, the results that can already be observed. It highlights the lessons and benchmarks that can be learnt from Hidalgo's experience, and formulates some assessments and recommendations for Hidalgo, based on the experiences of other OECD member countries.

This chapter is organised around three main sections. The first examines the current challenges and opportunities of Hidalgo's productive system as well as the main economic policies undertaken by the current administration. The second looks at the enabling factors needed to boost productivity over the medium and long term. Finally, the third focuses on governance responses including policies and strategies to support development in the state of Hidalgo.

Hidalgo's productive system and the new economic strategy

Regional productive fabric

The type of economic structure and its level of diversification can determine the economic outcome of a region. OECD regions that are undergoing a catching-up process in their stages of economic development are characterised by a high level of diversification and greater share of concentration in tradable activities. Tradable activities typically include manufacturing, some service sectors, resource extraction and utilities (OECD, 2016[1]) (see Box 2.1). Tradable sectors are those goods and services that are exported to other regions or countries either as final or intermediate goods. Productivity in tradable activities tends to be larger than non-tradable activities across OECD countries and regions. Therefore, they are key activities for lagging regions such as Hidalgo to develop in order to catch up to its productivity frontier to other regions.

Furthermore, high-productivity in non-tradable activities requires of economies of agglomeration, which are still underdeveloped in Hidalgo (see Chapter 3). It is to no surprise that Hidalgo's labour productivity in the non-tradable service sector is 2.6 times lower than in the tradable sector (Chapter 1). In this sense, integration into global value chains (GVC) also matter for productivity and sophistication of production (OECD, 2017[2]).

Hidalgo's economic history is largely characterised by the mining sector. Mining of different metals, including silver and gold in the Pachuca/Real del Monte region, had dominated the state's economy since the colonial era. Hidalgo's first important source of

post-colonial FDI came in 1824 from British direct investment in the region's mining sector following Mexico's War of Independence. This British investment contributed to the introduction to Hidalgo's mining industry of steam-powered machinery and many different modern technologies for the time (Randall, 1972[3]). Following a significant slowdown in the mining industry that started in the 1950s, which deteriorated Hidalgo's economy and welfare, efforts were undertaken to shift the state's economy from mining and agriculture to manufacturing. Of the manufacturing industries that have historically taken hold in Hidalgo, the state's textile industry has been an important engine of economic development.

Hidalgo has a relatively diversified economic structure. According to the index of specialisation (i.e. measures how specialised the state's productive structure is with respect to the national average), Hidalgo has a lower level of specialisation (0.31, where 1 means over-representation of sectors) than the average of Mexican states (0.38) (see Chapter 1).

Hidalgo is slightly less concentrated on tradable activities (35.7% of GVA) than the national average (37.7%) (See Table 2.1). Most of the tradable sector in Hidalgo is concentrated in manufacturing activities (58% of tradable activities), followed by non-manufacturing industry (i.e. energy) (17%). Other tradable sectors such as financial services or information have less prominence as a value-added activities in Hidalgo's economy and present one of the biggest productivity gaps with the national level (see Table 2.1).

Overall, Hidalgo's economic structure shows a higher share of manufacturing activities (20.6% of GVA) than the national average (16.1%). The largest contributor to manufacturing in the state is the subsector of production and refinery of petroleum (43%), which not only lacks the capacity of job creation (employs 5% of the labour force working in the manufacturing industry) but is concentrated in a small number of companies (8 establishments).

Other relevant subsectors in manufacturing are the textile industry (8% of manufacturing) and the food and beverage (7%). While they add a lower value to the manufacturing sector, they employ most of the labour-working population in the sector (26% and 22% respectively).

- In terms of textile, Mexico is the sixth supplier of clothing to the United States due in great measure to its proximity, low cost and high-quality suppliers of fibre, textile and clothing. In recent years, Mexico and Hidalgo have been gaining attractiveness to many Asian suppliers of textile due to increasing labour costs in Asia and shortening of textile supply chains. It benefits Hidalgo since the state leads the country in the preparation and spinning of textile fibres and yarn manufacturing, and ranks fourth nationally in the manufacture of fabrics (Álvarez Guevara, 2014[4]). The textile industry has a relatively high number of economic units (over 8 000, mostly small and medium-sized enterprises [SMEs]) and is highly linked with an extensive network of family-based informal sewing workshops. It generates sources of employment, yet not always formal, particularly for people with limited economic resources.

Other sectors of relevance in the state are:

- The energy sector of Hidalgo is the 5th largest producer of electricity in Mexico with an installed generation capacity of 2 386.60 megawatts (MW). Its geographic location is a competitive advantage due to its proximity to regions characterised by high consumption of energy. As an energy supplier, Hidalgo receives the raw material for its transformation in fuel and mainly delivery the electricity to the centre of the country. It has also an important potential for developing renewable energies, in particular, solar and wind energy.

- The agriculture, fisheries and forestry sector represented 3.7% of Hidalgo's GVA in 2015, although employs 18% of Hidalgo's working population. Most agriculture in Hidalgo (98.8%) is performed by small- or medium-sized farms and productive units. The state is the first producer of barley and alfalfa and it ranks among the top producers of maguey (wild agave) and corn in the country (see Chapter 3 for details concerning agriculture in Hidalgo).

- The service sector in Hidalgo is mostly concentrated in non-tradable activities (65% of the service sector's GVA is repairs, food sale, accommodation, healthcare and education). In fact, distributive trade, repairs and food services represent the most important sector in Hidalgo's economy (25.5% of GVA). As mentioned before, the non-tradable services sector has a particularly low productivity. This ongoing concentration in low productivity services limits the room for added value activities in the state (Chapter 1).

Table 2.1. GVA, Employment and productivity per industry, 2015

	Share over total GVA (%)		Share over total employment (%)		Labour productivity gap
	Mexico	Hidalgo	Mexico	Hidalgo	Hidalgo/Mexico
Distributive trade, repairs, transport, food services activities	26.4	25.5	31	29	0.71
Manufacturing	**16.1**	**20.6**	17	16	0.91
Real estate activities	12.0	13.5	1	1	0.73
Public administration, compulsory social services, education, human health	10.3	12.1	13	13	0.81
Non-manufacturing industry, including energy	**8.0**	**6.0**	16	15	0.79
Construction	7.8	10.1	8	10	0.71
Agriculture, forestry and fishing	**3.2**	**3.7**	14	18	0.59
Other services	**2.2**	**2.2**	11	10	0.75
Financial and insurance activities	**5.1**	**2.6**	1	1	0.65
Professional, scientific, technical activities, administrative	6.2	1.7	5	3	0.29
Information and communication	**3.1**	**0.6**	1	0	0.29

Notes: Labour productivity is calculated using employment by place of residence. When the labour productivity gap falls below 1 means that productivity in the state is lower than the national level. Tradable sectors are defined by a selection of sectors defined in the SNA 2008. They include agriculture, industry and manufacturing, information and communication, financial and insurance activities, agriculture and other services (see Box 2.1).
Tradable sectors are in bold.
Source: OECD (2018[5]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Box 2.1. Drivers of growth in different types of regions

Drivers of growth vary across levels of development. The barriers to growth that regions must overcome vary widely across regions and levels of development. Successful performance, therefore, requires a place-based approach, rather than "one-size-fits-all" economy policy. Several characteristics could be associated with a stronger regional catching-up process. OECD (2016[1]) classified regions with respect to their productivity growth in 3 groups and analysed the growth pattern from 2000 to 2013:

- Frontier regions (regions with the highest GDP per worker and 10% of national employment).

- Catching-up regions (regions growing faster than frontier).

- Diverging regions (regions falling behind).

The study found that several characteristics could be associated with a stronger regional catching-up process. Population density could also determine the capacity of a given region to benefit from the diffusion of technology, in particular in the service sectors. Another element is the level of education of the regional workforce. Research and development expenses should be a factor promoting the adoption of innovations. Finally, the quality of regional and local governments should contribute to the adoption of good policies and investment choices

In particular, the tradable share in gross value-added (GVA) is (statistically significantly) higher in catching-up regions (Figure 2.1). The tradable sector allows greater opportunities to catch up through "unconditional convergence", meaning convergence to the global frontier is less dependent on a country's particularities or institutional weaknesses. Tradable services and resource extraction are the elements of the tradable sector that account for most of the difference in the catching-up and diverging regions. The contributions to GVA from tradable services and from resource extraction (i.e. mining and drilling) in catching-up regions exceed the contributions in diverging regions, tradable services by about 5 percentage points and resource extraction by even more in 2013.

Overall several characteristics of the tradable sector give rise to its special role for economies. First, it tends to be an innovative and dynamic sector, which adapts to and pushes the technological frontier. Second, manufacturing has traditionally employed not only the highly skilled, but also a large number of medium- and low-skilled workers at relatively high wages, which sets it apart from other high-productivity sectors such as mining or finance. Third, the growth and success of the tradable sector are not limited by the size of the local market, which decouples its growth, to a certain degree, from the rest of the economy (Rodrik, 2016[6]).

Figure 2.1. The tradable sector plays a critical role in regional productivity trends

GVA and employment shares by type in TL2 regions
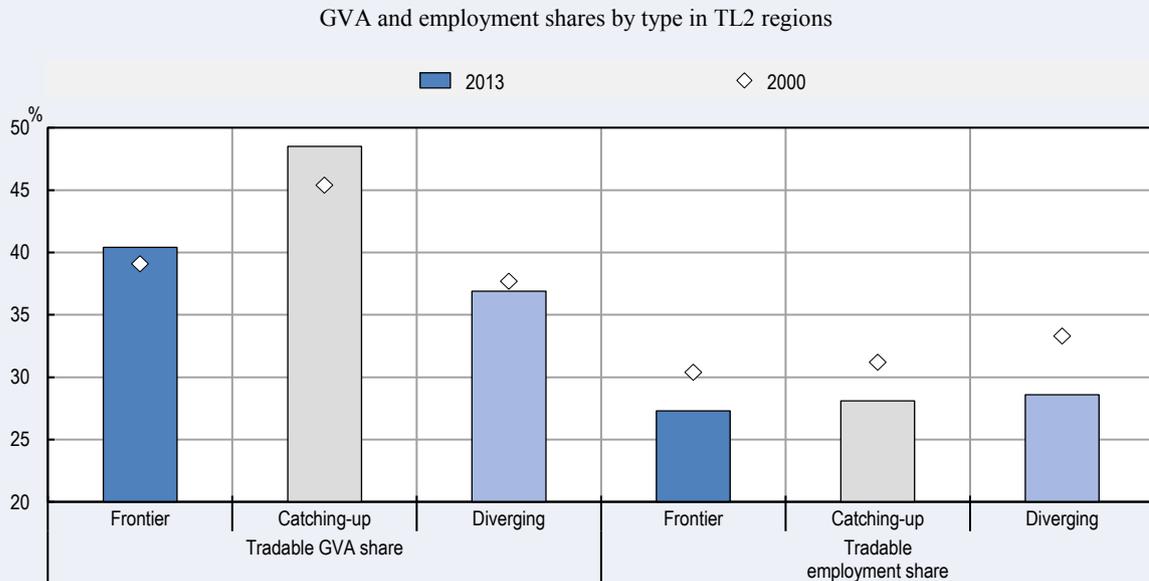
Note: Catching-up/diverging regions grew by at least 5 percentage points more/less than their national frontier over the 2000-13 period. The frontier is defined as the aggregation of regions with the highest GDP per worker and representing 10% of national employment. Due to lack of regional data over the period, only 24 countries are included in the averages. Tradable sectors are defined by a selection of the 10 industries defined in the SNA 2008. They include: agriculture, industry, information and communication, financial and insurance activities, and other services. Non-tradable sectors are composed of construction, distributive trade, repairs, transport, accommodation, food services activities, real estate activities, business services and public administration.

Sources: OECD (2016[11]), *OECD Regional Outlook 2016: Productive Regions for Inclusive Societies*, https://doi.org/10.1787/9789264260245-en; Rodrik, D. (2016[6]), "Premature deindustrialization", *Journal of Economic Growth*, Vol. 21(1), pp. 1-33.

Hidalgo's FDI has surged in recent years and is becoming more diversified

Hidalgo has ranked 25th place out of all the Mexican states in terms of foreign direct investment (FDI) attraction over the last 10 years to 2017 (INEGI). It underlines the historic low capacity of Hidalgo to attract FDI when compared to other Mexican regions. Fluctuations in its annual FDI figures have been high from year to year, responding to exceptionalities in investments (see Chapter 1). Hidalgo's FDI strategy has traditionally followed a case-by-case approach and often one-off investments.

This trend, however, appears to be reversing in recent years. Since 2014, FDI in Hidalgo has increased (Figure 2.2) with a relatively greater dispersion in origins than the national level (Figure 2.3). The importance of investment from the United States is much less dominant in Hidalgo (23% of the FDI between 2008 and 2017) than at the national level (43%) (Secretary of Economic Development of Hidalgo, 2016[7]). The lower reliance is partially explained by its low initial level of FDI and by the efforts of the current administration to diversify its foreign investments. In terms of allocation, most of the FDI has been allocated to manufacturing, transport and warehousing (see Chapter 1).

Figure 2.2. Nominal foreign direct investment (FDI) in Hidalgo
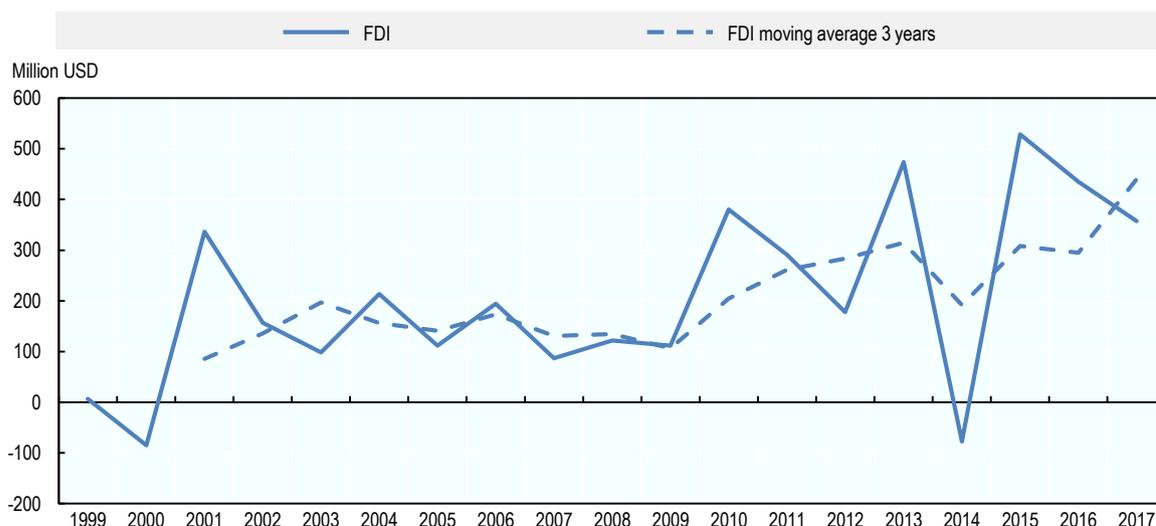
Source: National Registry of Foreign Investment (2018[8]), Secretary of Economy, https://www.gob.mx/se/acc iones-y-programas/competiti.

Figure 2.3. Origin of FDI, average between 2008 and 2017
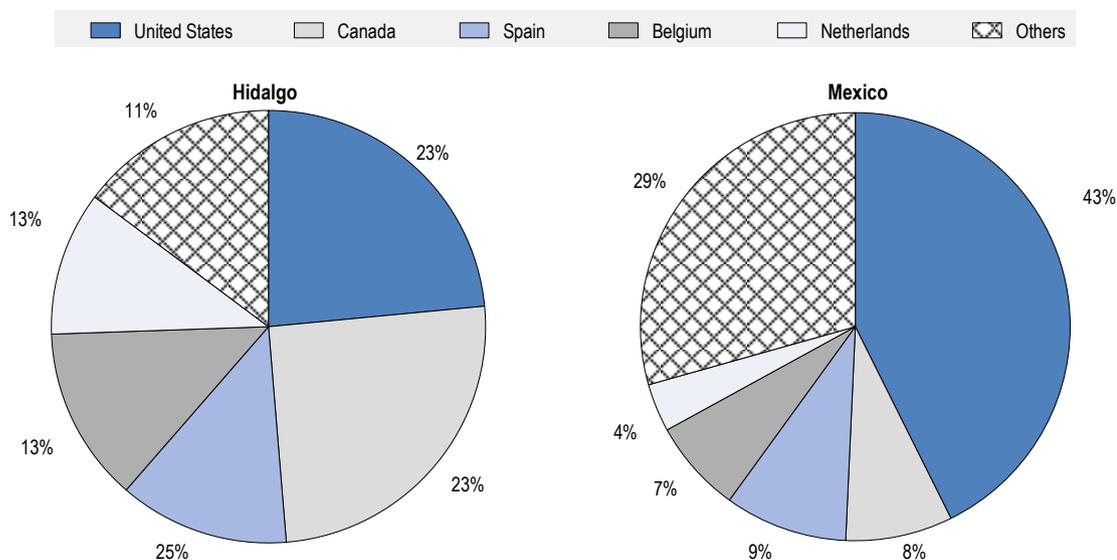
Source: National Registry of Foreign Investment (2018[8]), Secretary of Economy, https://www.gob.mx/se/acc iones-y-programas/competiti.

Global value chain (GVC)

GVCs are often complex networks involving multi-directional flows of material inputs, services and personnel, ownership of assets via foreign direct investment (FDI) in a cross-border context, enforcement of contracts and standards, encompassing transfer of technology and protection of intellectual property (IP).

Improving the GVC linkages of local industry has many benefits. It entails importing competition and accelerating the reallocation of domestic resources towards the most

competitive firms. It also facilitates the diffusion of knowledge spill-overs from suppliers or foreign direct investment (FDI). Through improved GVC participation, local industries tend to gain access to new markets that contribute to better optimise local human capital, competitive advantages and natural resource endowments that contribute to greater economic growth.

Many Mexican industries have increased their importance within the GVC. The country's policy has favoured foreign trade and investment through various agreements; 12 free trade agreements have been signed with 46 countries (OECD, 2017[2]). Mexico is gradually evolving into a global manufacturing hub. Following the North American Free Trade Agreement (NAFTA), Mexico's strategic location, low unit labour costs and increasingly adept labour force helped the country consolidate its position within the GVC (i.e. some Asian suppliers are using Mexico as an entrance point to North American markets). Mexico initially had benefited from its integration in GVCs mostly as an assembler of manufactured inputs. However, in recent years, it has moved up the GVC to increasingly producing domestic content. This means that more domestic value-added is present in Mexico's exports (with the automobile sector leading the way and producing more cars with higher value-added [luxury cars] and with less imported content) (OECD, 2017[2]).

With the rising strains in the international trade environment, existing trade agreements have been afflicted by increased uncertainty. Given Mexico's trade openness, any retreat from trade agreements directly impacts its exports and investments. In part, because of Mexico's success in establishing its position within the GVCs, Mexico could lose substantial market share with trading partners, triggering a significant deceleration in output, depending on the size of the trade flows affected (OECD, 2017[2]). Without turning its back on the position that Mexico has built and made for itself within the North American industrial value chain, there is also a logical need to expand the scope of its industrial influence that would reduce its dependence on an increasingly domineering partner at its northern border.

Hidalgo has not benefited as much as many of its neighbouring states from the consolidation of Mexico within the GVC. This may be due to past policy circumstances, but also to the relative isolation of Hidalgo. The state was historically perceived as a place where people and goods could go to, but not go through in terms of connectivity. This condition was dramatically changed in 2009 with the construction of the Arco Norte that circumvents the capital city and is now a key aspect of Hidalgo's attractiveness (see section on connectivity and infrastructure later in this chapter).

There is an important potential to develop the participation of Hidalgo's businesses within the foreign market. Hidalgo's economy has seen exports represent only a very marginal proportion of its business. Hidalgo is the 13th state with the lowest level of exports in the country (0.5% of national exports value). In 2016, transport equipment, mainly auto-parts, represented most of the exports (50%), followed by products derived from oil and coal (26%) and textile industry, mainly textile inputs (5%). Agro-industry exports, found inside others products, represented 1.5% of exports (Figure 2.4).

As seen in Figure 2.4, Hidalgo's linkages with external markets are mainly driven by its manufacturing sector; particularly intermediate products (transport equipment, i.e. auto parts, petroleum derivative products and textile inputs). It underlines that the participation of Hidalgo in GVC tends to be more as a supplier of inputs to other markets rather than a producer of final products.

Figure 2.4. Distribution of exports by subsector, Hidalgo (2016)
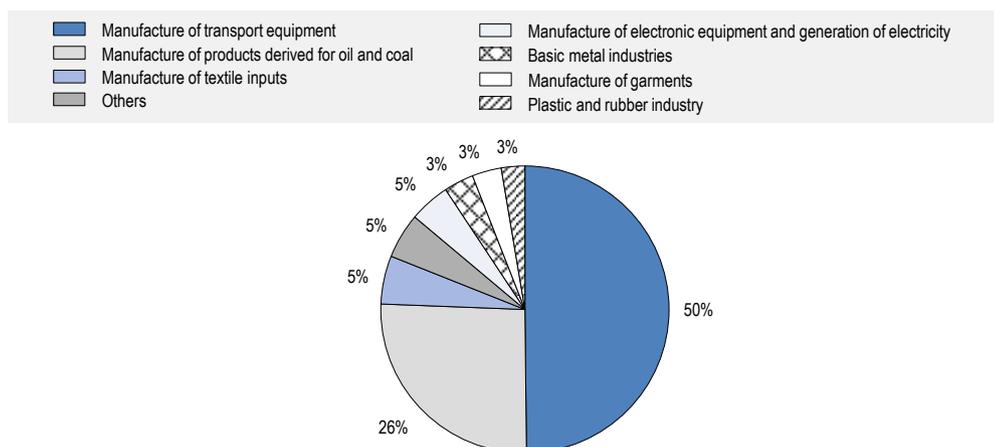
Source: INEGI (2017[9]), *Exports by Federative Entity, México*.

Globalisation has brought an increased competition to the tradable sector and especially to manufacturing. In this context, Hidalgo cannot base its economic growth in intermediate, standardised manufacturing products, but needs to move up into flexible and customised-oriented production. To create larger value in GVCs, Hidalgo should increase the ratio of domestic value added to its exports. The highest value-added activities in GVCs can be often found in pre-fabrication activities (research and development (R&D,) branding development, design) and in post-fabrication activities (marketing, promotion and after-sales services). This phenomenon is known as the smile curve (OECD, 2017[2]) (Figure 2.5).

Figure 2.5. The smile curve in GVC
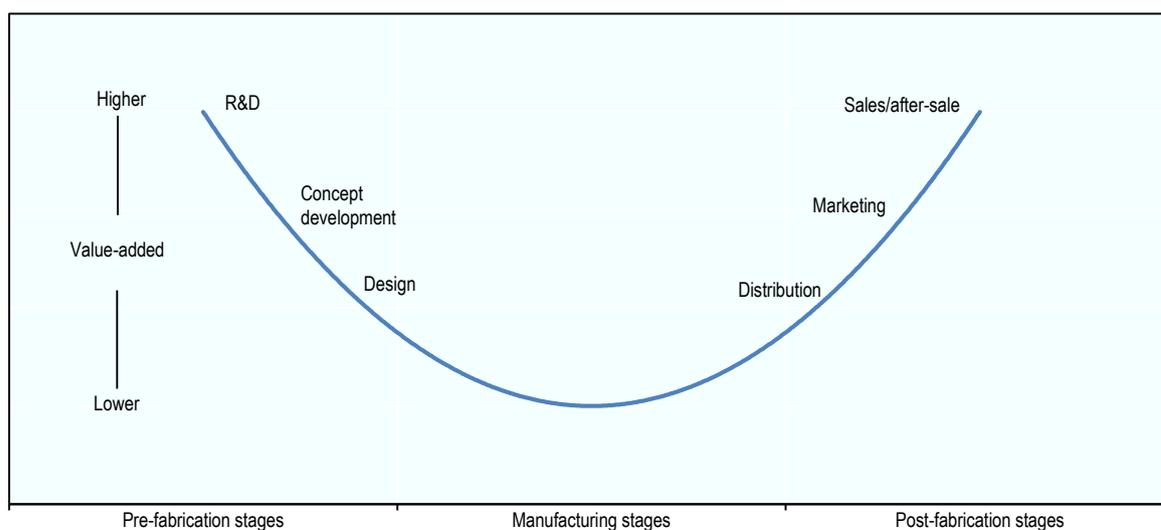
Source: Adapted from Baldwin. R.E. and S.J. Evenett (2015[10]), "Value creation and trade in 21st century manufacturing", *Journal of Regional Science*, Vol. 55(1), pp. 31-50.

Hidalgo can then encourage firms to integrate shop-floor production with product development (design) and sales. This particularly applies to the textile industry, which has a vast production base but lacks branding and marketing skills. Furthermore, a higher support to R&D investments and concept development can spur high-value activities in the state. It is especially needed since Hidalgo has decreased its number of R&D outputs (from 0.8 patents per million inhabitants in 2002 to 0.5 in 2015), lagging far behind the national average (see Chapter 1). The state can also co-ordinate along with federal government a better link between established national firms that export their products (i.e. the refinery) with local suppliers.

Additionally, Hidalgo has the potential to link other sectors with foreign markets by trying to diversify its composition of exports. Supporting exports from other tradable sectors, such as agriculture and services, will generate a greater presence in foreign markets. A larger interconnection with foreign markets not only diversifies the outlets for Hidalgo's products but also favours Hidalgo's visibility and that of its firms, which could potentially help to open up and better consolidate the state's position within GVCs. Hidalgo also has the opportunity to build a position within a relatively more global industrial value chain. Not having locked itself into an overwhelming dependence on North American industry means that Hidalgo has the possibility to more strategically diversify its international industrial linkages.

There are hence untapped opportunities for Hidalgo to transition towards tradable and productive activities in the service sector such as logistics or information. In terms of manufacturing, the state can increase productivity in subsectors that employ a large workforce and have the potential to build locally different stages of the productive chain such as textile and food industry. However, Hidalgo should bear in mind the risks associated with the very rapid evolution of GVCs. A GVC can experiences changes in response to global factors including trade restrictions or technological change. Therefore, opportunities linked to GVCs should not be analysed as static but rather as constantly moving targets that need very careful diagnoses and well-designed strategies. Overall, the allocation strategy on economic sectors should be based on the analysis of the state's position within the global value chains.

Hidalgo's competitive advantages and endowments

Hidalgo's existing competitive advantages, which include its safety, environment, connectivity, low business cost and result-driven governance are very much in line with making the state an attractive place for people, ideas, investments and businesses.

Safety

Many new foreign investors in Hidalgo have selected the state due to its relative safety and low level of conflict when compared to most other Mexican states. Because of the often-difficult social conflicts and illicit conduct plaguing many regions of Mexico, and the consequent negative external reputation that has emerged, many foreign investors and firms may be reluctant to do business in Mexico, despite its potential benefits. A place like Hidalgo, that offers relative safety for its tangible and human resources, forms an attractive oasis in the midst of an otherwise complicated and risk-ridden business environment. Greater visibility and promotion of this fact would most likely attract investment in even greater numbers. Hidalgo's public administration needs to keep the efforts and resources in maintaining and further developing safety as one of the state's main competitive advantages for attracting FDI.

Similarly, the state has been faced with relatively low levels of labour conflicts in the past. This is also seen by external investors as a point of attractiveness for Hidalgo, albeit one that will require wise and proactive action by local administrations in collaboration with the private sector, neighbouring states and labour organisations. At the moment, on average, the wages and compensations offered to Hidalgo's labour market fall below those found in comparable jobs of neighbouring states (Figure 2.6). As the state's economic development plan achieves its results and the demand for labour increases, conditions for workers will need to quickly adjust to the national averages if labour conflicts are to be avoided.

Figure 2.6. Crime rate in selected Mexican states
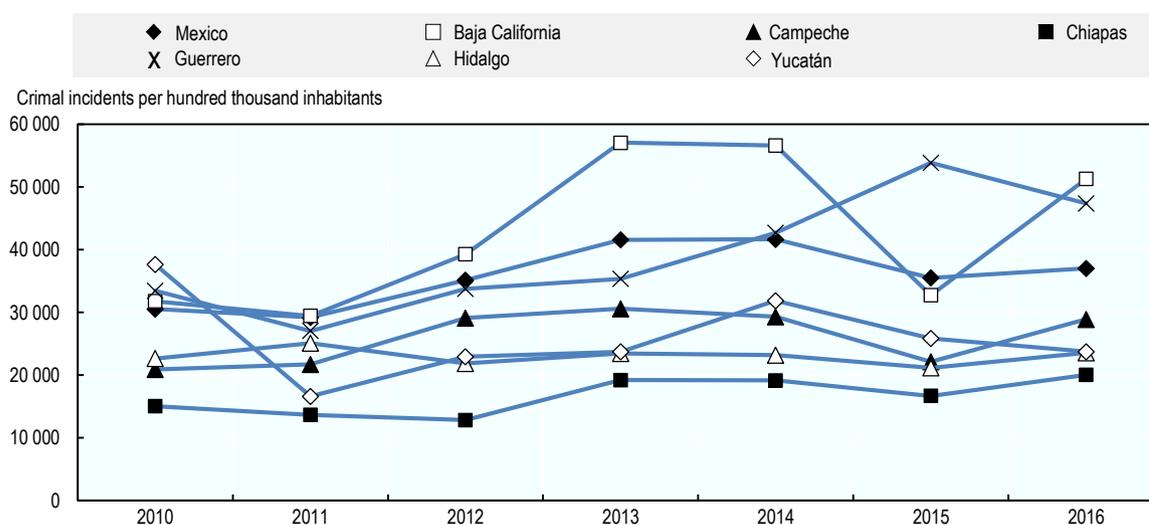
Source: INEGI (2018[11]), *Mortality: Deaths by Homicide*, http://www.inegi.org.mx/sistemas/olap/proyectos/bd/continuas/mortalidad/defuncioneshom.asp?s=est

Results driven governance

Much has been done by Hidalgo's current state administration (2016-22) to create a supportive business environment for FDI. Until 2016, for the general citizen, entrepreneur or investor, the ease of doing business was deteriorating in comparison to the rest of Mexico (Figure 2.7). As described in chapter 4, the state of Hidalgo is now working on creating a conducive business environment by implementing an administrative simplification strategy. Steps have therefore been taken to improve the relevant regulatory framework. Similarly, legislation has been adopted that obliges the state administration and that of the state's 84 municipalities to improve regulations in ways that will make things more agile for business (see Chapter 4). This is seen as the first steps towards the eradication of excessive bureaucracy and corruption linked to business activities. These measures are meant to streamline and reduce transaction costs associated with doing business in Hidalgo.

These are important steps forward for amplifying Hidalgo's attractiveness but they are still mostly aimed at large FDI business interests. The efforts to improve Hidalgo's business environment and create a fertile eco-system for the attraction, creation and growth of businesses should further include ventures of all sizes and origins beyond those perceived as strategic. Moreover, the state should hence seek for a wider political

consensus on the implemented reforms, involving other political parties, the private sector, civil society and relevant stakeholders, to attain a long-term stability of the recent reforms beyond political cycles.

Figure 2.7. Ease of opening up a firm and doing business in Hidalgo, 2012-16
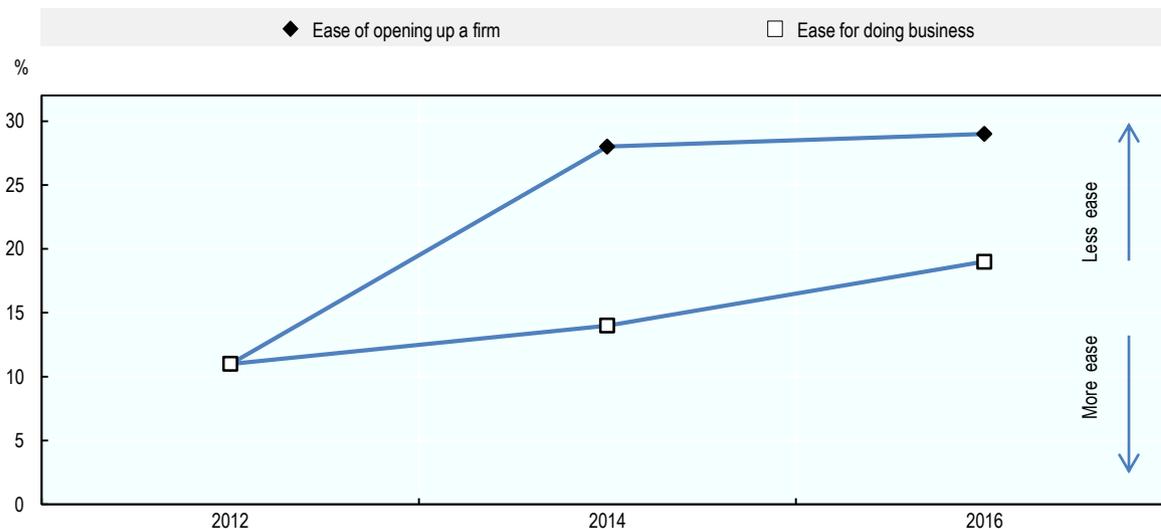
Source: World Bank (2016[12]), *Doing Business in Mexico*. Washington D.C

Environment

Hidalgo benefits from a relatively better quality of its environment (see Chapter 1). This can potentially make Hidalgo a better place to live and establish a business. Although certain specific industrial areas in the south of Hidalgo are struggling with air and water contamination issues (see Chapter 3), overall the state of Hidalgo enjoys low levels of environmental contamination, especially compared to the Mexico City Metropolitan Area.

The environmental virtues of Hidalgo stand to become increasingly important as a source of comparative advantage. This advantage will stem from the growing importance that environmental concerns will suppose for quality living standards and eventually the location decisions of individuals and businesses. High human capital employees tend to be especially attracted to places where they can have high-quality standards of living. This is key if Hidalgo is to establish and grow a knowledge-intensive economic base for the state. Similarly, environmental conditions are likely to deteriorate in the metropolitan area of Mexico's capital city (Ibarrarán, 2011[13]). This can potentially accentuate the comparative attractiveness of Hidalgo resulting from the quality of its environment.

Northern Hidalgo is especially endowed by the quality of its natural and environmental conditions. Such attractiveness can be strategic for industries such as tourism. Hidalgo must strike a good balance between exploiting the advantages that the environmental conditions can offer, without spoiling these attributes in the process.

Connectivity

Hidalgo lies in close proximity to the national capital and to the State of Mexico, which represents Mexico's main economic and population hub. The southern part of the state

falls within the Mexico City Metropolitan Area and modern road and rail networks connect the State's southern municipalities with the nation's capital. The Arco Norte highway is an important transport artery passing through the southern limits of Hidalgo. The highway circumvents the Mexico Valley and its very congested metropolitan area, allowing travellers and transporters to bypass the city and important delays. The Arco Norte was inaugurated in 2009 and amplified in 2018. It offers Hidalgo State a road connection with Mexico's main north-south axis and a means of disenclavement that avoids the congested metropolitan area. Businesses and their road-freight can now reach the United States much more easily. The road system also allows easy access to Mexico's western and eastern naval ports without the need for passing through the capital.

The southern part of the state is also well served by an extensive rail network that connects the state to the main north-south as well as east-west axes. This rail infrastructure is adequate for cargo, general logistics as well as passenger transport.

The state's connectivity is less developed and would require attention in the northern half of Hidalgo, located in the more topographically arduous Sierra Madre Oriental region. Similar to the issue of accessibility in northern Hidalgo already discussed in Chapter 1, the transport connectivity in this region, both road and rail, is deficient. This scarcity comes in terms of both inter-municipal connectivity as well as poor connections with the capital and the regional economic centres, especially those to the east in the neighbouring state of Veracruz where naval ports that could be strategic for the development of northern Hidalgo are located.

Low business cost

The cost of doing business in Hidalgo can be relatively more economical. In comparison to the cost of establishing and doing business in another part of the Mexico City Metropolitan Area, Hidalgo offers several cost-saving advantages. The potential cost advantages of the state come from the connectivity of the state (in the south) with the Mexico City area, as well as easy connections with the Atlantic and Pacific port areas that avoid the congested Mexico City area. Hidalgo also falls on Mexico's main north-south road and rail axes. This allows for logistical savings relative to more peripheral, less connected states, or those that are unable to avoid the delays and costs of going through the capital's intense traffic.

Industrial real estate is also another source of cost advantage. Land and real estate in Hidalgo, particularly industrial real estate, is relatively less expensive than comparable sites in the capital's greater metropolitan area. This can suppose important savings for businesses establishing their offices and operations in Hidalgo.

Labour costs and wages tend to be lower in Hidalgo. This potentially reflects the lower cost of living in Hidalgo as compared to the Mexico City area. However, the administration must resist the temptation of using Hidalgo's current low labour costs as a point of attractiveness. Using labour costs as a point of attraction would only contribute to entering a race to the bottom, where neither Hidalgo's workforce nor its industry would end up benefiting in the long-run. Not only would this strategy likely result in labour conflicts that would harm Hidalgo's reputation and image amongst potential FDI, but the benefits of building a high human capital labour force would be forgone. Encouraging investments in Hidalgo's labour force and greater human capital development will potentially increase the overall value added of doing business in Hidalgo.

Hidalgo's existing competitive advantages – *safety, results-driven governance, environment, connectivity and low business cost* – can constitute important differentiated assets for the state's economic development if well integrated within Hidalgo's strategy for the future. The state's competitive advantages, however, have to be carefully maintained. These strategic strengths should be further enforced and protected, eventually making them core competencies for the state's economic strategy. A solid territorial development strategy should be based on its assets and potential, both emerging from its competitive advantages. Out of all potential competitive advantages, Hidalgo should focus on those that offer the greatest strategic value in terms of exclusiveness, market relevance and sustainability of the competitive advantage that comes from being difficult or very costly for other regions to duplicate or imitate.

Apart from the said competitive advantages, the proximity to the capital and the availability of vacant industrial infrastructure currently form the main existing endowments of the state. The lack of clear tangible, human or natural endowments for business means that regulatory and policy measures will need to be the principal tools used to amplify local competitive advantages and implement the state's economic strategy. A strategic incremental approach that measures progress in each stage can be a good tool to promote its competitive advantages. The resources and capabilities that form the basis of Hidalgo's competitiveness are dynamic in nature. This means that they change over time and can build these up, pushing capacity limits and allowing for new more valuable advantages. From an incremental strategic point of view, Hidalgo should envision a clear path of resource and capability development, so as to build on its value-adding advantages and strengthen its attractiveness for FDI.

Hidalgo's economic strategy

The development experience across several OECD countries has shown that strategic planning can be important to the development process. Countries and regions at certain levels of economic development can benefit from planning especially in the provision of basic public services and those that are essential for growth and diversification, such as schooling, infrastructure and creating the right framework for investments in innovation. Effective strategic planning can help solve co-ordination issues, externality issues, reduce asymmetries of information, socialise part of the costs of discovery, contribute to the better functioning of markets and create new markets where there are none (OECD, 2016[14]).

Hidalgo has given itself a competitive new economic strategy (Figure 2.8). The state government, which took office in 2016, quickly put in place its economic strategy that falls under the responsibility of the state administration's Secretariat of Economic Development. This ambitious strategy came as a marked contrast to that of previous administrations, which had a less proactive stance on actions to stimulate and guide the local state economy.

Hidalgo's Economic Strategy is supported by three key actions (a regional economic policy with sustainable development and joint work with the private sector) and built around four main guiding action pillars (Secretary of Economic Development of Hidalgo, 2016[7]):

1. **Create a conducive business environment:** Generate an institutional framework that promotes existing economic activity, facilitates the opening and operation of businesses and promotes productivity as well as competition.

2. **Strengthen existing economic activity**: To consolidate current and future economic vocations, fostering the competitiveness of companies and their inclusion in global markets.

3. **Promote new local, national and foreign investments**: Strengthen and create better conditions for attracting investment in infrastructure, connectivity, human talent, skilled labour, quality of life, legal certainty and security.

4. **Promote entrepreneurship, innovation and development of new strategic sectors**: To promote an economy based on innovation, technology, knowledge and high-impact entrepreneurship, aimed at the new sectors of the global economy.

Figure 2.8. Sectorial plan for the economic strategy of Hidalgo
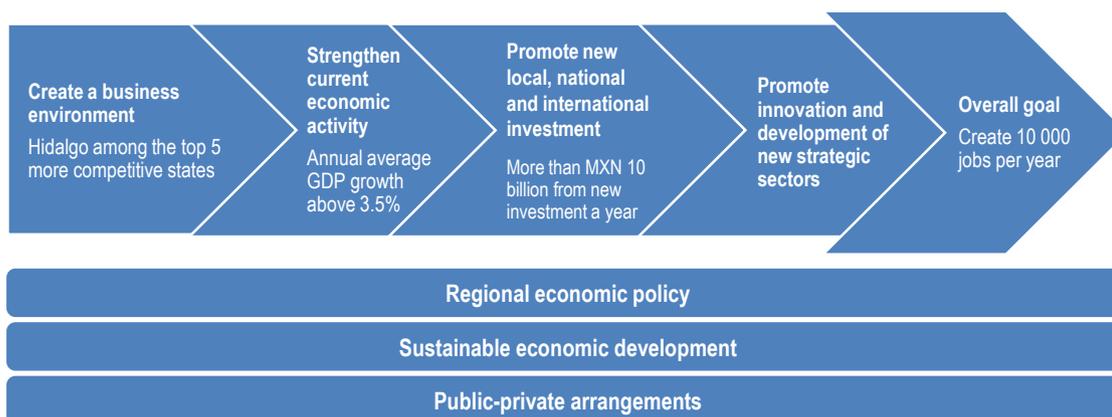
Source: Secretary of Economic Development of Hidalgo (2018[15]), *Presentation of Economic Development*.

The economic strategy identified by some ambitious goals. Each action pillar is linked to a specific and measurable target:

1. Hidalgo aims to be ranked amongst the top five competitive states in Mexico.

2. Its average annual GDP growth is set at 3.5%.

3. FDI should reach MXN 10 billion of investment per year.

4. It should develop new clusters in four sectors.

5. Ten thousand new workers should be formally employed per year.

The last objective has emerged from the assessment of the level of growth required to optimise Hidalgo's local human capital generation. Out of the approximate 16 000 new graduates coming out of Hidalgo's higher education system every year, it is calculated that some 10 000 of them either do not find adequate employment or have to leave the state to find a job. The annual objectives set by the state are meant to absorb the local human capital and create durable economic growth for Hidalgo.

Hidalgo's state and municipal administrations are working to improve the first pillar – create a conducive business environment – by gaining credibility and moving up standardised international rankings. It includes the World Bank *Doing Business in Mexico* report. The ranking has not been very favourable to Hidalgo in the past, motivating the

current administration to directly address those aspects that can allow the state to make progress in the ranking and in this way signal credibility towards potential foreign investors. There is an initial working programme with Pachuca so as to identify unnecessary government procedures, timings and steps.

A full revision of its regulatory framework has already been undertaken (more on this in Chapter 4). In April 2017 a constitutional reform was approved, making regulatory improvements mandatory for all state and municipal governments of Hidalgo. In the same month, the Law of Regulatory Improvement (*Ley de Mejora Regulatoria*) was approved. It gives the state, among other business facilitation measures, a one-stop shop system for all government procedures and sanction mechanisms (more on this in Chapter 4). This law has been described by the Federal Commission for Regulatory Improvement as Mexico's most advanced, mainly due to its one-stop shop system.

In addition, the government of Hidalgo has been approving a package of laws that will further enhance the state's business environment. These include: the Law of Productive Alliances for Investment to attract more investment; the Law for the Promotion of Economic Development to facilitate the establishment of new economic units; and the Law to Promote Hidalgo's Sustainable Energy Development. The latter aims to increase Hidalgo's competitiveness by encouraging, promoting and regulating sustainable energy development. The law also serves to grant legal certainty to investors that participate in the optimal use of energy infrastructure and promote energy efficiency.

As for the second pillar – strengthen current economic activity – the state has been conducting programmes to support first employment with apprenticeship schemes and promote local SMEs and entrepreneurs (the programmes will be discussed in detail in the second section of this chapter). Other sectors where the economic strategy is being implemented include:

- In the manufacturing sector, the sectorial plan for economic development has identified that business from the largest productive sectors (metal-mechanic, agro-industrial, textile) should adopt better design management practices and develop new products through technological innovations that allow them to create higher value added in the manufacturing process.

- As for the energy industry, the government has a plan to consolidate Hidalgo as the most important state for transformation, storage and transit of energy products. It is contemplating infrastructure projects focusing on the construction of gas pipelines and promoting renewable energy projects (solar and wind).

- In services, the state aims to increase the industrial parks located in the southern municipalities. To do so, it has invested in the maintenance of installations and enabling new zones to build industrial parks.

- In the agriculture sector, Hidalgo's administration is actively working to modernise and increase the value added of Hidalgo's farming operations. In this sense, through a co-ordinated effort, the Secretary of Agriculture supports the state's farmers to migrate towards contract farming schemes. Such a system will help local farmers to play a better role within the local value chain of Hidalgo's food and beverage industries.

Finally, for the pillar "Increasing new foreign and local investment", SEDECO has established three strategic priorities with concrete actions (Table 2.2). The strategy aims to set an attractive economic environment with competitive conditions for business

creation as well as direct support and follow-up to potential investors with an adaptation of regulatory framework and promotional campaigns.

Table 2.2. Strategy and actions to increase foreign and local investment in Hidalgo

Strategies	Actions
Establish a modern system to permanently support the potential investor during the different phases of investment in the state	- Provide support and business assistance, specialised by sector, to guide the investor in the specific project requirements.
	- Manage and link the different governmental institutions, public and private organisations, to facilitate and expedite the establishment of companies.
	- Create a digital portal aimed at potential investors, a one-stop shop to manage and facilitate the requests for new investment projects.
	- Integrate a global network of contacts that allows the identification of potential investors.
	- Manage the attraction of investments in clean energy.
Implement global promotion strategies for the dissemination of competitive advantages and investment opportunities available in Hidalgo	- Launch a promotional campaign to position the image of Hidalgo as the new investment destination in the centre of the country.
	- Design specialised and sectorised promotional material regarding investment, in digital and printed format.
	- Organise and/or participate in promotional events, business fora and business summits of strategic and consolidated sectors.
Promote the conditions that define a favourable business environment, to encourage and facilitate the establishment of new companies and the consolidation of those already established	- Adapt the legal and regulatory framework to generate legal certainty, as well as facilitate and guide the balanced development of investments in the state.
	- Promote collaboration agreements between the productive and educational sectors in terms of training human capital and training for work, which contribute to the transfer of knowledge and specialisation.

Source: Secretary of Economic Development of Hidalgo (2016[7]), *Sectorial Program of Economic Development 2017-22*.

In a co-ordination effort to align the strategic goals across the territory, SEDECO conducted a co-ordinated territorial agenda among state and municipalities. It involved meeting with municipalities to identify their needs and productive infrastructure in place. The goal is to attract private investment at the local level based on the potential assets of each municipality and encourage municipal governments to focus on business attention and monitoring of investments. SEDECO hence identified 26 areas and 40 warehouses with industrial potential.

According to the economic strategic plan, on the fourth pillar "Promote and develop new strategic sectors", the plan aims to boost four strategic sectors pertaining to energy, agro-industry, sustainable electric mobility and chemical-pharmaceutical. Hidalgo's economic strategy aims to promote investment, entrepreneurship and innovation within these specific industries.

These sectors were chosen as a strategy to boost high-value-added sectors that increase the quality of jobs and wages in the state. The selection of these sectors was based on the following:

- Energy was selected with the aim of boosting the renewable energy industry in the state by addressing the state's potential of affordable land in a location not

suitable for agriculture with favourable sunlight exposition. An American solar energy company has started a project in the municipality of Nopala. It aims to start operation during the first semester of 2019. The energy will be supplied to the national energy network. Another project of wind energy is in the first phase in the municipality of Huichapan, an area known for its favourable winds It is expected to have a production capacity of 120 MW.

- Agro-industry responds to the expected link that can be made between the agriculture sector and the new beverage and agri-food companies arriving to the state.

- Boosting electric mobility in order to make Hidalgo a destination for the manufacture of hybrid and electric vehicles. It aims to benefit from the closeness to Mexico City and its potential demand for these types of vehicle and leverage on the arrival of a new foreign automotive company as an anchor to develop the sector.

- The pharmaceutical sector can use as a leverage the existing pharmaceutical companies that have established themselves in the state's industrial parks. Pisa Industrial Pharmaceutics has invested in a manufacturing site for veterinary products in the Atilaquia Industrial Park (close to Tula). Likewise, the Mexican pharmaceutical company Quimpharma invested MXN 102 million in the industrial park Tepeji del Río.

To mobilise these new sectors and the broader economic base, the current administration (Secretary of Economic Development of Hidalgo, 2016[7]) has identified four factors as the main focus to improve Hidalgo's regional competitiveness:

1. Costs: According to the state administration, many firms that decide to locate to and remain in Hidalgo may do so in order to benefit from the relative cost advantages that the state offers or can eventually come to offer. The administration is, therefore, working in order to amplify and consolidate these cost-saving opportunities for Hidalgo's firms and industries. The cost advantages of the state are said to come from the state's connectivity (in the south) with the Mexico City area, allowing for logistical savings relative to more peripheral states. Industrial real estate and land is also another source of cost advantage as it is relatively less expensive than comparable sites in the capital's greater metropolitan area. Additionally, joint efforts are being conducted by the state administration to consolidate the local productive value chains in order to build a business ecosystem that offers cheaper locally available inputs for entrepreneurs. In the words of the state administration, the cost advantages for firms are not meant to come from labour savings.

2. Quality: The state and local administrations are working with local firms in order to get them to achieve recognisable quality standards and certifications. This is especially important to promote export market expansion amongst local producers. Developing an eco-system of quality supplier and complimentary industries can also become a point of attractiveness for potential investors and entrepreneurs, especially those that compete on the differentiation of their goods and services, which are much more likely to be compatible with the high value-added economic structure that Hidalgo wants to give itself.

3. Innovation: Efforts are being implemented in order to stimulate innovation, especially within industries deemed strategic for their knowledge generation and

intensity. These industries are more likely to generate spill-overs that can encourage greater value added throughout the local economy.

4. Value creation: This aspect is closely linked to innovation and perceived as a natural outcome of sector-specific promotion policy. There is a need for greater specification of the character of the value required for Hidalgo.

Positive results are being generated

Some positive results are visible, particularly with respect to the creation of jobs and the attraction of FDI. During the 2 years of the strategy (second half of 2016-first half of 2018), more than 30 new investment projects have occurred in the state, amounting to over MXN 30 billion. Overall, the FDI in Hidalgo grew 73% between 2017 and 2018, above the growth at the national level (19%) (Secretary of Economic Development of Hidalgo, 2018[15]). This influx of new investments has led to a rise in the state's employment. During the first half of 2018, Hidalgo registered the 2nd highest growth rate of formal jobs (6.5%) across Mexico (3.3%).

Some examples of the sectors in which some of these new investments were made include: the beverage industry (Modelo), the food industry (MUNSA and BIMBO), the construction industry (GICSA) (estimated of MXN 1.9 billion), the electrical automobile industry (JAC) (estimated of MXN 4.4 billion and 5 000 jobs).

The recent foreign investments are thus an important opportunity for Hidalgo to attain a more sustainable development growth across the territory. The strategic economic plan has called for a diversified and strong economic activity. Much of this improvement in the economic environment will have to rely on the correct integration of the FDI with the local assets, business and human capital. To do so, an incremental strategic approach is needed where short-term results can be capitalised in a sustainable manner in the future. Such a strategy has to be built upon the development of a right ecosystem of enabling factors to boost productivity in the long term.

Enabling factors for Hidalgo's competitiveness and prosperity

The different pillars of Hidalgo's economic strategy are all set to improve productivity in the state. However, addressing this productivity challenge to attain a sustainable outcome over time will require a strategic and integrated approach to investing in key enabling factors. The specific enabling factors for regional growth have been identified through the observation by the OECD of many regional economies throughout a diverse set of countries (OECD, 2009[17]). Although there is no magic solution that fits all contexts, some common elements do emerge in regions where the public administration has been able to steer their economy to more prosperous and sustainable levels. These common elements, referred to as enabling factors, include infrastructure, human capital, business ecosystem, and innovation as well as integrated regional policy (see Box.2.2). These factors are interdependent and regional growth requires a full set of them to be present simultaneously in order to have any real effectiveness over a sustainable and inclusive growth.

According to OECD findings, greater growth occurs when regions are able to mobilise their own local assets and resources, rather than depend on public sector support (OECD, 2009[17]). Hidalgo's government should promote growth accordingly. Fostering growth, even in regions of the state that are lagging economically, is in the interest of Hidalgo as it contributes to the state's output without hindering growth opportunities elsewhere. It

also helps to better attenuate several social and agglomeration related challenges that can hamper development efforts.

Box 2.2. Enabling factors for regional growth

OECD analysis of the key determinants of regional growth, the length of time needed for these factors to generate growth and the most successful combinations of factors lead to several suggestions for effective regional policies:

- **Provide infrastructure as part of an integrated regional approach**. The analysis suggests that infrastructure alone has no impact on regional growth unless regions are endowed with adequate levels of human capital and innovation. In other words, infrastructure is a necessary, but insufficient, condition for growth. The analysis also reveals that it takes about three years for infrastructure to positively influence growth.

- **Invest in human capital**. Regions with well-educated populations will grow. Investments in tertiary education take about three years to have a positive impact on regional growth.

- **Emphasise innovation and research and development**. Investments in R&D have a positive effect on patent activity in all categories, as do R&D expenditures by businesses, the public sector, higher education institutions and the private non-profit sector. However, innovation is a longer-term process and appears to have a positive influence on regional growth only after five years. The analysis suggests that as capital and talent agglomerate, they tend to positively influence growth in neighbouring regions. However, innovation remains a highly localised element.

- **Focus on integrated regional policies.** Agglomeration economies are partly responsible for regional growth. Sources of growth from within regions, such as human capital and innovation, are more important than a region's physical distance from markets. Although a region with good accessibility to markets has an added advantage, its growth depends on the presence of human capital, innovation, infrastructure and economies of agglomeration. Regions perform well when local actors in a regional innovation system can communicate easily with each other. Indeed, one region's performance strongly influences neighbouring regions, suggesting that inter-regional trade and inter-regional linkages play an important role in regional growth.

Source: OECD (2009[17]), *How Regions Grow: Trends and Analysis*, http://dx.doi.org/10.1787/978926403946 9-en.

Overall, focusing on enabling factors across the territory is especially meaningful for a state such as Hidalgo. It faces a highly imbalanced distribution of its economic activity (with a north-south divide that leads to greater private sector concentration in the southern municipalities (see Chapter 1). Such a north-south divide is not only economic but rather multifaceted in nature. In fact, the state has a marked cultural divide, where the north has a much greater proportion of the rural indigenous population. This is coupled with an important geographical and topological divide, where the southern half of the state is situated within the Eje Neovolcanico topographical region shared with Mexico City Valley, whereas the northern half of Hidalgo State is characterised by the mountainous

topographical region of the Sierra Madre Oriental. This has obvious consequences on the accessibility and connectivity of northern Hidalgo (poor access to markets, lacks local proximity service provision and a deficient availability of many basic amenities).

Given that Hidalgo's current economic strategy stands to have a disproportionate impact in the south, it is important to plan for future pockets of agglomeration in the southern municipalities, promote a feasible and adaptable development plan in the north and a plan linking the northern and southern geographies. The north will need its own development strategy based on bottom-up endogenous processes. Pre-emptive measures aimed at boosting economic activity in northern Hidalgo, as well as complementary measures facilitating the integration of newcomers in southern Hidalgo, should play a greater role within the state's economic strategy. These are not only predictable social consequences of the state's economic development efforts, but they can have significant economic and strategic consequences if they come to negatively affect the existing safety that characterises the state.

In general, the enabling factors are instrumental for the state to reduce the strong divide present in the state while addressing the main bottlenecks for productivity and to unlock opportunities for growth in different areas.

Access to market: Infrastructure

Infrastructure is a necessary driver for productivity growth and well-being in OECD regions (OECD, 2012), although it is not a sufficient condition. It improves accessibility with local, national and international foreign markets, facilitates public service delivery and reduces the cost of the flow of technology and the movement of labour. Investments on infrastructure in isolation, however, do not automatically lead to higher levels of development. To be effective, they need to be co-ordinated with other enabling factors for development, in particular education, innovation and a well-functioning business environment.

Particularly in Hidalgo, investing in quality infrastructure and accessibility is not only a matter of economic outcome but is directly linked with the need to improve well-being and reduce the current north-south divide in the region.

Hidalgo's northern territories and settlement areas are predominantly rural in nature. They also have a strong interrelation to southern urban settlements in the region due to strong interlinkages in commercial, labour, educational, medical or even leisure-related activities. Similarly, although to a lesser extent, residents of the state's urban areas also have strong linkages with the north travelling for tourism, visiting family and the homestead, or for buying certain goods and services that are unavailable in the south. The main obstacle to further valorise these interrelations is the lack of adequate road and inexistent passenger rail connections between Hidalgo's north and south.

Infrastructure has been improving in Hidalgo, albeit skewed towards the south

Road network

The quality and structure of the road network in Hidalgo underline the unequal conditions between southern and northern municipalities. Road network in the state is composed mainly of unpaved rural roads with most of the paved and modern roads located in the south of the state (Figure 2.9). Hidalgo has a high road density relative to its land area (0.6 km of road per km² vs 0.3 km of road/km² across Mexican states). However, the

share of unpaved roads is higher (62%), than the average of Mexican states (53%) (INEGI, 2016[18]). Rural roads account for more than half of the network (51%), which is above the average of the country (43%). The federal roads, the most modern roads, account for just 7% of the network, far below the share across Mexican states (17%).

The most important road development has been the Arco Norte highway that crosses the south of the state. The inauguration of this highway in 2009 brought Hidalgo out of its enclavement. Local population and industry can now circumvent the very congested Mexico Valley to reach the main national road networks, including the main north-south trade routes that link Mexico to the United States, and ports in both the west linking Hidalgo to the Pacific Ocean and east with the Gulf of Mexico. This allows for important time and cost savings, and allows the state to now be strategically situated from a logistical standpoint in the centre of Mexico.

Figure 2.9. Main paved roads, Hidalgo, 2017
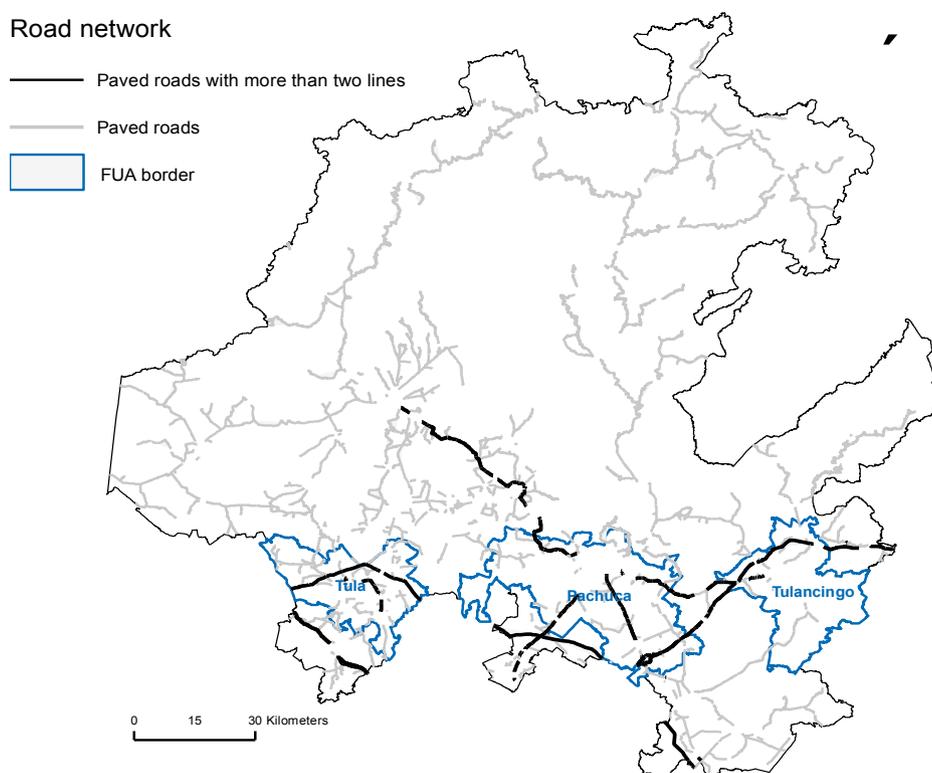
Source: INEGI (n.d.[18]), *Conjunto de Datos Vectoriales de Carreteras y Vialidades Urbanas Edición 1.0 (Distribución por Entidad Federativa)*, http://www.inegi.org.mx/geo/contenidos/topografia/vectoriales_carreteras.aspx.

Rail network and access to ports

Overall, Hidalgo is well connected to the national rail network and benefits by its favourable geographic closeness to key national ports (Figure 2.10). With 865 kilometres of railways, it is the 15th state with the largest rail network in the country. The closest seaport to Hidalgo's capital city, Pachuca, is that of Tuxpan in the neighbouring state of

Veracruz. This port is situated at barely two hours' distance by road from Pachuca. It is also one of the closest ports to Mexico's national capital, and the connection between both requires crossing the state of Hidalgo. This is important for Hidalgo as the port of Tuxpan is Mexico's largest receptor of petrol and supplies 96% of all the petroleum consumed in the Mexico City Valley. The port recently completed an expansion phase that has added a new terminal to its capacity infrastructure. Estimated annual capacity of the port in 2018 is of 700 000 TEU (20 feet containers) and 100 000 cars. The relative proximity of Hidalgo to the port will give the state some clear logistical advantages that can help its attractiveness and competitiveness for certain industries and investments.

Figure 2.10. Railway and port connectivity in Hidalgo
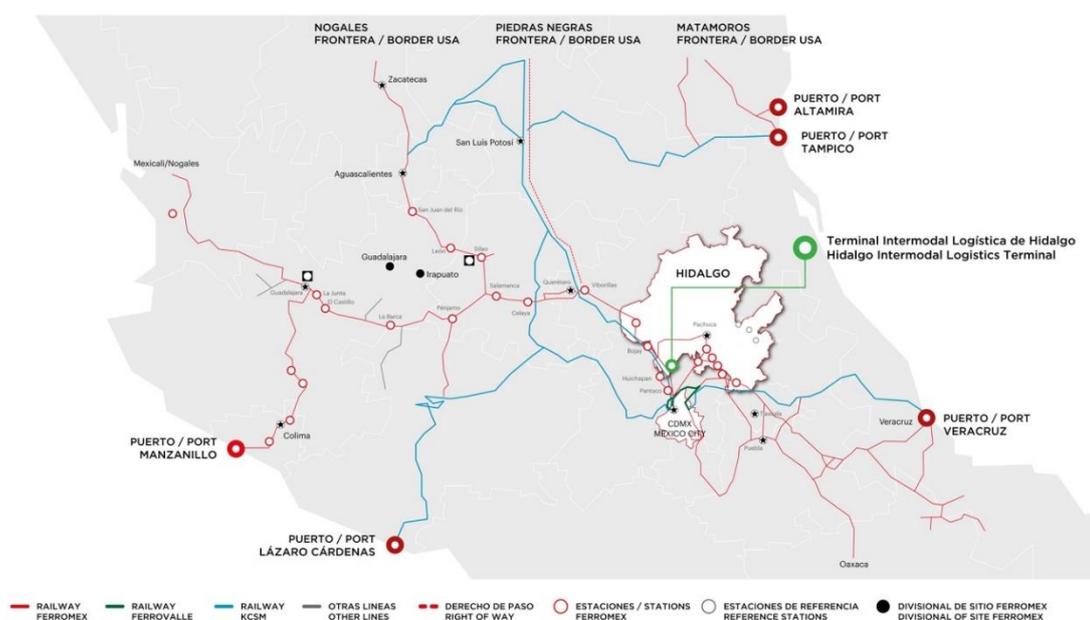
Source: Government of Hidalgo (2017[19]), *Answers to OECD Questionnaire for the Hidalgo Territorial Review.*

Industrial parks and logistics

In Hidalgo, there are ten industrial parks located in the south of the state, near Arco Norte (see Box 2.3). Each of these is meant to lay down favourable conditions for the spontaneous development of an industrial cluster. All have the basic services required for industrial operations, such as electricity, water supply, drainage infrastructure and telecommunications. Some of Hidalgo's industrial parks are also equipped with facilities for the supply of natural gas and rail services. Each of these industrial parks has a pre-defined vocation focused on high value-added industries for the operation of industrial plants and distribution centres. Some additional parks are also being built through private investment such as the industrial park of the Altiplano. However, only one park fulfils international standards and most of the key important parks are located just in the south of the state (Figure 2.11). There is hence a need for further modernisation and efforts in following international certifications.

Box 2.3. Hidalgo's industrial parks

Hidalgo has ten main industrial parks, all located in the south of the state:

1. PLATAH. Logistics, food, industrial equipment and industrial kitchens.
   Characteristics: Surface: 312 ha.; 119 lots.
2. Atitalaquia. Food sector, logistics, construction, technological innovation.
   Characteristics: Surface: 229 ha.; 70 lots.
3. Tula. Petrochemical, plastic, pharmaceutical and construction.
   Characteristics: Surface: 97 ha.; 114 lots.
4. Tepeji del Río. Food, beverages, textiles, clothing, chemicals and logistics.
   Characteristics: Surface: 518.2 ha.; 266 lots.
5. Tizayuca. Petrochemical, food and beverages, textile-confection, construction, metalworking, logistics.
   Characteristics: Surface: 300 ha.; 314 lots.
6. La Reforma. Food, beverages, construction and distribution.
   Characteristics: Surface: 34.95 ha.; 50 lots.
7. Metropolitano. Automotive, textile and clothing.
   Characteristics: Surface: 49.38 ha.; 27 lots.
8. Sahagún. Automotive, metalworking.
   Characteristics: Area: 50.20 ha.; 30 lots.
9. MPyMes Sahagún. Metalworking.
   Characteristics: Surface: 9 ha.; 45 lots.
10. QUMA. Industrial, commercial and logistics.
    Characteristics: Surface: 72 ha.; 42 lots.

Figure 2.11. Industrial parks' location in Hidalgo
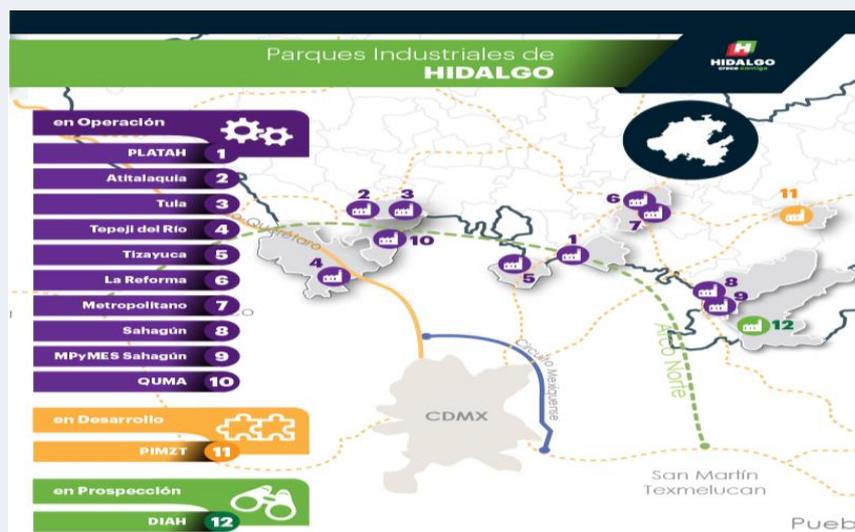
Source: Government of Hidalgo (2017[19]), *Answers to OECD Questionnaire for the Hidalgo Territorial Review*.

The state is giving itself the adequate logistic infrastructure. Hidalgo is in the process of establishing the *Terminal Intermodal Logística de Hidalgo* (TILH), which is an inland intermodal logistics centre with an annual capacity of 200 000 TEU, as well as a new logistics park (*Zona de Actividad Logística de Hidalgo* – ZALH). This dry port and logistics centre is the product of collaboration between Hidalgo's state administration, Hidalgo's corporate alliance Corporativo UNNE (leader of Mexico's logistic sector) and the Hong-Kong-based firm Hutchison Port Holding. This infrastructure will help consolidate Hidalgo's position as a logistical leader for central Mexican freight and cargo.

Energy

Hidalgo is an important player in terms of energy infrastructure for the country. It produces 43% of the hydropower in the country's central region and it is the 5th biggest electricity producer in the country (9.4% of electricity in Mexico) with 25 electric stations across the state. The Tula-Tepeji region, in the southwest of the state, houses the Miguel Hidalgo refinery, the biggest Mexican refinery in the country. The state has three gas pipelines that all cross thorough of the southern municipalities and provide the energy to the industrial parks' network. Hidalgo is also building its first solar farm and has important potential in wind energy.

ICT infrastructure

Virtual connectivity is also important for Hidalgo. In 2017, 67% of households in Hidalgo lacked an Internet connection, a higher percentage than the national average of 49.1% (Chapter 1). As with most other infrastructure in Hidalgo, the distribution of Internet connectivity is largely marked by the north-south divide, with several municipalities of southern Hidalgo having Internet coverage levels of up to half of all households. This contrasts strongly with many municipalities of the north, where in some case less than 1% of local households has an Internet connection. It can be expected that Internet access and use by businesses in Hidalgo follows roughly the same patterns as the overall population.

The government is aiming to improve infrastructure, but challenges remain

The state has set the strategy to enhance and modernise the road network with the support of the federal government. It includes designing a programme to evaluate the status of the network, improve existent roads and develop a project portfolio of roadways. In this regard, two important projects, co-financed by the federal government stand out:

- The expansion of the Pachuca-Mexico City highway from two to four-lanes.

- The expansion and modernisation of the road that connects Huejutla in the north with Pachuca into a four-lane highway.

The Huejutla-Pachuca road is particularly important for attaining an inclusive growth in the state. The completion of this initiative will benefit eight municipalities and allow their rural areas to not only increase the trade with urban centres but also receive public services more efficient. However, due to budget cuts and ongoing negotiation at the national level, the road has experienced delays keeping the project at its very early construction phase.

There is also an active plan, promoted by the state administration, to further develop and deploy the fibre across Hidalgo's territory and reach 100% Internet connectivity. For this, the state launched the strategy *Hidalgo for Universal Coverage in Telecommunications* which involves a regulation on telecommunications to guide and clarify rules on

broadband investments that was approved in mid-2018. This will give much higher levels of connectivity and access to public services (telemedicine and tele-education are also contemplated in the strategy), particularly to municipalities in the north. It will also allow small producers a better access to market and potentially make important advances in terms of innovation. As part of the strategy, the government of Hidalgo will make available more than 3 700 public buildings for the private sector to install fibre optic, antennas and radio bases that will help to bring Internet and mobile communications to increase coverage. So far, the state government has generated some initial results like the optical fibre metropolitan ring (investment of MXN 60 million), the increase of access to the Internet in 300 public buildings and the creation of 200 digital access centres (Government of Hidalgo, 2018[21]).

Availability of good Internet is crucial for business, but availability does not automatically suppose high connectivity. Many communities of the north lack the basic tools and training to make good use of the added connectivity. Connecting the state, especially low-density populated areas, will need to be accompanied by programmes and measures to help Hidalgo's population and businesses make the optimal use of this connectivity for the prosperity and well-being. Examples of community engagement to support the provision of fibre optical networks in rural areas of Sweden and the United Kingdom can be used as a guide for Hidalgo (Box 2.4).

In terms of road network, the state should make further efforts to improve the quality of roads, especially rural roads (e.g. increase paved roads). In addition, a strategy to improve the resilience of its road network is needed. Natural events have been underlined as a major problem to preserve good quality infrastructure in the state. It has a stock of more than 500 km of roads affected by floods. This kind of impact on the infrastructure not only implies a lack of communication for certain localities but also increases the risk and reduces the time to commute.

Although the traditional priority for Hidalgo in terms of infrastructure investments has centred on enhancing linkages with Mexico City, better connections with neighbouring states, international markets and between northern and central municipalities will improve the accessibility of the whole territory. Linking northern municipalities with the ports of the gulf can unlock most of their economic opportunities and boost the internationalisation of local business. It can also further exploit the geographic proximity to some port. Huejutla, alike other northern municipalities, are closer to some ports like Tuxpan (152 km distance) or Tampico (167 km distance) than to the capital of the state Pachuca (221 km). For doing so, improving the co-ordination with neighbouring states and federal government is needed in terms of infrastructural planning and development for both passenger and freight transport (Chapter 4). Notably, Hidalgo should:

- Explore mechanism of co-ordination with neighbouring states to develop infrastructure projects that benefit northern municipalities with roads, secondary roads and railways. It may thereafter generate further advantage of its geographic location by increasing its trading relations with the other states (e.g. San Luis de Potosi or Veracruz).

- Promote a co-ordinated development of modern infrastructure connectivity between the north part of the state with the ports of the Gulf (Chapter 4 further develops the co-ordination mechanisms for this).

- Strengthen the connection between municipalities in the centre of the state with Huejutla or other poles of growth in the north.

Box 2.4. Deployment of fibre optical networks through collaborative approaches

As an increasing amount of economic and social activity is undertaken over communication networks it becomes more challenging to be restricted to low-capacity broadband when living in some rural or remote areas. Given that most countries have regions that are sparsely populated, it raises the question of how to improve broadband access in these areas.

There is a growing "grassroots movement" in Sweden to extend optical network fibre coverage to rural villages. There are around 1 000 small village fibre networks in Sweden, in addition to the 190 municipal networks, which on average connect 150 households. These networks are primarily operated as co-operatives, in combination with public funding and connection fees paid by end-users. People in these communities also participate through volunteering their labour or equipment as well as rights of way in the case of the landowners. The incumbent telecommunication operator, as well as other companies, provides various toolkits and services for the deployment of village fibre networks in order to safeguard that these networks meet industry requirements. As the deployment cost per access in rural areas can be as much as four times what it cost in urban areas, such development may not attract commercial players and rely on such collaborative approaches. Aside from any public funding, Sweden's experience suggests that village networks require local initiatives and commitment as well as leadership through the development of local broadband plans and strategies. They also require co-ordination with authorities to handle a variety of regulatory and legal issues and demand competency on how to build and maintain broadband networks. The most decisive factor is that people in these areas of Sweden are prepared to use their resources and contribute with several thousand hours of work to make a village network a reality.

In the United Kingdom, Community Broadband Scotland is engaging with remote and rural communities in order to support residents to develop their own community-led broadband solutions. Examples of ongoing projects include those in Ewes Valley (Dumfries and Galloway), Tomintoul and Glenlivet (Moray), which are inland mountain communities located within the Moray area of the Cairngorm National Park. Another example of a larger project can be found in Canada and the small Alberta town of Olds with a population of 8 500, which has built its own fibre network through the town's non-profit economic development called O-net. The network is being deployed to all households in the town with a number of positive effects reported for the community.

*Source*s: OECD (Forthcoming[221]), *Territorial Reviews: Småland-Blekinge 2019 Monitoring progress and special focus on migrant integration*

Education, human capital and skills

Human capital is a critical factor influencing regional growth and development throughout all types of OECD regions (OECD, 2017[23]). A skilled human capital is at the essence of regional development and competitiveness by building a learning society that is able to absorb as well as create knowledge, drive innovation and facilitate local adaptability to changing labour demands and technology. Human capital endowment is paramount to boosting productivity growth in the region.

Improved human capital also helps to stimulate social cohesion and well-being because of access to better jobs and potential quality of life enhancements. Analysis by the OECD

has shown that, overall, reducing the proportion of the people in a region with very low skills seems to matter more than increasing the share with very high skill levels (OECD, 2017[23]).

Mexico scores below the OECD average in all 3 domains of OECD Programme for International Student Assessment (PISA) 2015: science (416 vs. 493), mathematics (408 vs. 490) and reading (423 vs. 493). Educational attainment in Mexico is indeed a challenge with severe consequences for the national economic development, particularly in relation to tackling informality (see Chapter 1).

In this sense, if Hidalgo wants to reach the aims set in its strategic plan in terms of economic transformation towards a higher-value economy, first and foremost, Hidalgo will need to build and optimise its human capital endowment. Its current workforce is mostly low-skilled, as only a small percentage of students who start basic education (10.1% in 2016/17) move on to pursue higher education.

Hidalgo has strong basic education but weak incentives for students to pursue higher education

In the current educational context of Hidalgo, the state's strength is in the basic level of education, both in coverage and quality. During the 2016/17 school year, coverage in basic education level reached 100% (in elementary and middle school) and dropout rates were very low (0% and 9% respectively). In the 2017 national education evaluation PLANEA for middle school (which is comprised within the basic education: pre- school, elementary and middle school), Hidalgo registered a positive performance. In mathematics, Hidalgo (512) scored above the national average (497) and in language and communication Hidalgo (504) is closer to the national average (495) (Figure 2.12).

Figure 2.12. National average scores of PLANEA 2017 in middle school
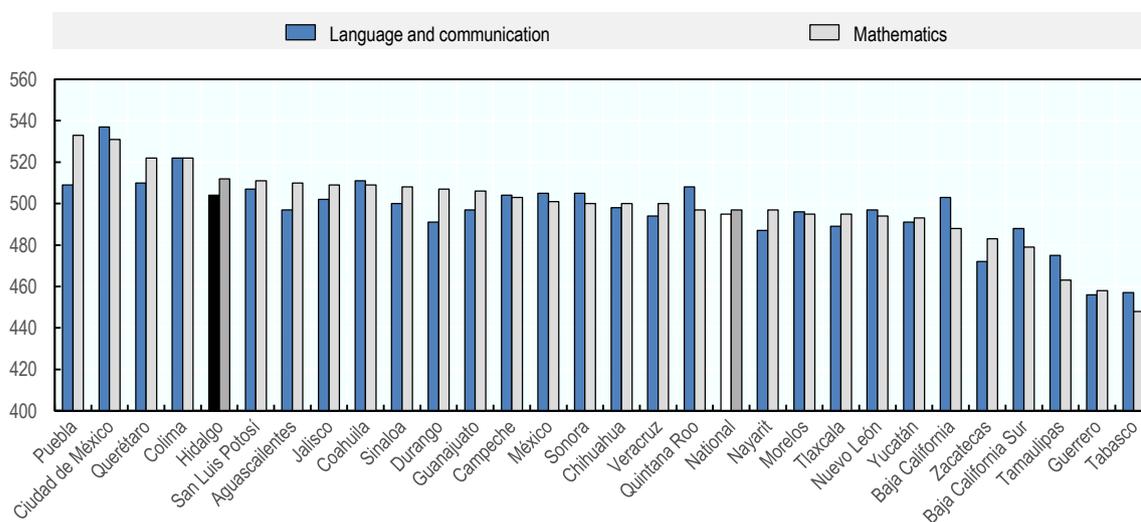
Source: INEE (2018[24]), *Resultados Nacionales 2017: 3 de Secundaria*, http://planea.sep.gob.mx/content/general/docs/2017/RESULTADOS_NACIONALES_PLANEA2017.pdf.

High school enrolment has nearly doubled since 2007 (41.7%). The growth rate has been more significant in the technological high school track (50.2%) than in the general one. In comparison to the national average of students that pursued the technological high school

track in 2016/17 (36.3%), Hidalgo's proportion of high school students on the same track was higher (42.5%). This high school track could potentially turn into a pipeline of middle-skilled workers for the formal private sector.

Despite these advances, Hidalgo faces a more challenging situation when it comes to high school and higher education where coverage is low and dropout levels high. Higher education in Hidalgo has a low coverage (see Figure 2.13) and faces challenges to provide incentives for high school students to continue with higher studies. While dropout in high school is a national phenomenon, Hidalgo's dropout rates (13.7%) are above the national average (12.8% in 2016/17). There is great diversity among Mexican states, for example, Durango (17.3%), Morelos (17%) and Campeche (16.6%) have large dropout rates; while Querétaro (10.7%) and Jalisco (2.7%) experience low dropout levels. High dropout rates in Hidalgo can be related to existing poverty levels (see Chapter 1) and are also a symptom of the mismatch between the offer provided by the state's higher education institutions and the demands of the local industry.

Figure 2.13. Total enrolment for the 2016/17 school year
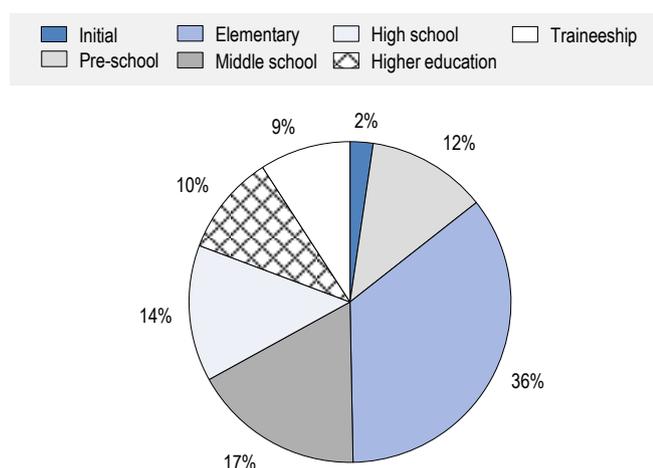
Note: Basic education comprises pre- school, elementary and middle school and it represents 64.4% of the total enrolment of students in Hidalgo.
Source: Government of Hidalgo (2017[19]), *Answers to OECD Questionnaire for the Hidalgo Territorial Review.*

At the moment, there is a strong mismatch between the human capital development in the state's educational institutions and the demands of industry. Within the current composition of university studies by field, social sciences, administration and law (39.4%) dominate higher education in Hidalgo, while engineering manufacture and construction come next with almost a third of enrolled students (31.5%). Overall, in the curriculum of tertiary education, there is an over-representation of social sciences and underrepresentation of computer science (4%), agronomy (2.4%) and services (1%). It can be improved due to the prominence of the agriculture and tourism sector in the state's economy and the strategic focus of the administration on high-skilled sectors.

There is an even greater mismatch when considering the future needs of human capital required to effectively implement the state's economic development plan. The share of students going into engineering studies is a positive sign of alignment with the state's

development priorities; however, the proportion of students that pursue degrees in natural and computer science remains low (3.7%) (see Figure 2.14).

Figure 2.14. Percentage of higher education degrees by field of study in Hidalgo, 2016/17
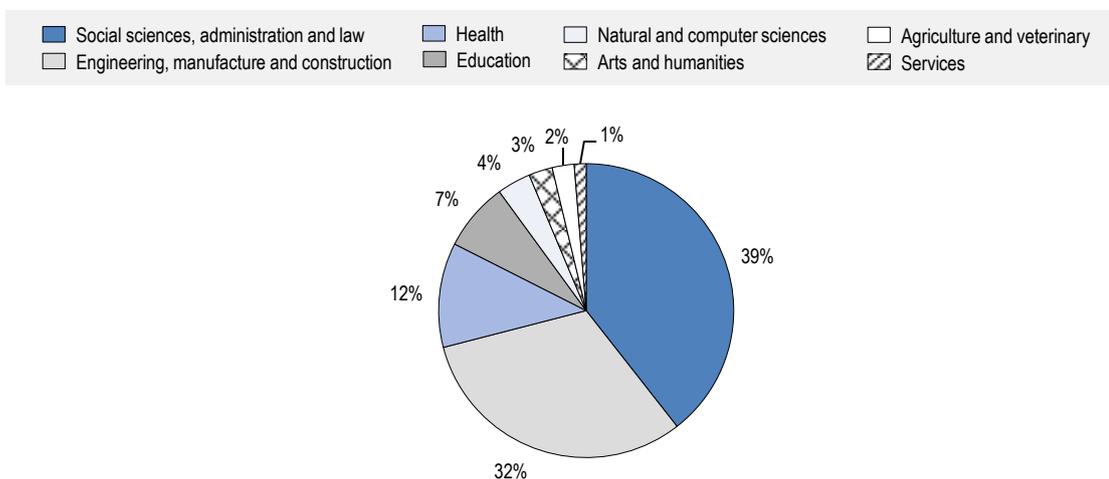
Source: Government of Hidalgo (2017[19]), *Answers to OECD Questionnaire for the Hidalgo Territorial Review*

Hidalgo's policies and actions to face challenges

To face the current challenges, the government of Hidalgo has a set of objectives:

- Design joint actions to improve the development of competencies in basic, upper-middle and higher education as a policy to determine a specific graduate profile for each level of education.

- Improve Hidalgo's education indicators through the strengthening of activities such as tutoring, academic mentoring, and educational guidance.

- Improve the results of student's standardised tests.

In order to deliver these results, teacher training is central. Strengthen training, upgrading and career advancement schemes for school directors, pedagogues and teachers are also considered priorities for the Secretary of Public Education of Hidalgo. This objective is also aligned with the federal Education Reform (2012).

In order to tackle high school dropout rates, particularly when it is related to poverty and inequality, different Mexican states have pursued diverse policies. Hidalgo could benefit from these examples to reduce dropout in high school. In the case of Jalisco that reduced dropout from 3.2% (2015/16) to 2.7% (2016/17), the creation of technical councils integrated by school directors, professors and parents has been a key aspect of their policy. In addition to these councils, the state government has invested in infrastructure and distance learning (Secretaria de Educación de Jalisco, 2018[26]). In the case of Morelos, where dropout rates have decreased from 20.8% (2015/16) to 17% (2016/17) their strategy includes an universal scholarship (Beca Salario) to incentivise students to stay in school. Any student enrolled in a public institution from the third year of middle school until postgraduate studies is eligible to apply (OECD, 2017[23]).

There are also increasing attempts to link Hidalgo's education and human capital development policy with its economic plan, particularly to encourage the creation of links between academia and the private sector (Table 2.3).

Table 2.3. Policies and objectives to create linkages between academia and private sector

Policy	Objective
Implementation of the Mexican Dual Model of Academic Training (*Modelo Mexicano de Formación Dual*)	Design curriculum that provides a balance between academic and practical formation.
My first job, my first wage (*Mi primer emploe, mi primer salario*)	Foster linkages between students and local companies and improve human capital through paid internships.
Entrepreneurs Model (Modelo de Emprendedores)	Encourage the development of skills, linkages and financial incentives (scholarships) for an entrepreneurial environment.
Financial Park	Foster the creation of linkages between universities and the private sector. Targeted for high school students to acquire basic financial knowledge.

Source: Government of Hidalgo (2017[19]), *Answers to OECD Questionnaire for the Hidalgo Territorial Review.*

A relevant policy to better link academia and business is the Mexican Dual Model of Academic Training. It is a federal policy designed to integrate students from the technical high school track into the labour market as part of the broader federal Education Reform of 2012. In order to do so, the Ministry of Education designed a balanced curriculum between theory and practical training and will provide certification to students that participate in the programme. It initially targeted 11 pioneer states with plans for a gradual expansion to the whole country.

The government of Hidalgo, through the local Secretary of Education, launched a pioneer agreement in 2017 with the Consejo Coordinador Empresarial de Hidalgo (local business association) to begin the implementation of the Dual Model of Academic Training. Since the beginning of 2018, there are further plans to accelerate its implementation by involving more local business associations and technical schools and universities. This is a step in the right direction and the reach of the programme should be expanded in order to benefit the large cohorts of graduates from the technical high school track and reduce the mismatch in the local labour market.

In order to support the higher knowledge-intensive pedagogy, greater emphasis should be given to the provision of intermediate skills within the Hidalgo labour force. Vocational training, but also language and IT training could make a significant difference in the productivity of Hidalgo's workforce and substantially increase their suitability with the current and future needs of the state's private sector. See Box 2.5 for the importance of vocational education and training.

Box 2.5. Vocational education and training (VET) for local labour markets

Vocational education and training (VET) delivery should be aligned with the local sectoral and occupational labour market profile. Turning specifically to mechanisms for local decision-making in VET, the ability of local actors to align VET delivery with the sectoral and occupational profile of the local labour market is critical.

Countries are using a number of mechanisms to allow local actors to tailor the sectors and occupations covered by VET programmes in their local areas. These include: i) developing a national menu of choices, from which local stakeholders are able to choose; ii) allowing for local choice as long as nationally set parameters are met; and iii) market-based mechanisms, including steering through subsidies.

The market approach case often drives apprenticeship programmes as they require interest from both a trainee and a workplace sponsor. In the short-term, the system ensures a reasonable degree of alignment between apprenticeship offerings and labour market demands, but this does not always imply alignment in the longer-term and might mean a sacrifice of strategic goals.

Source: OECD (2016[271]), *Job Creation and Local Economic Development 2016*, http://dx.doi.org/10.1787/9789264261976-en.

The state government programme "*Mi primer empleo, mi primer salario*" (My first job, my first wage) is the largest effort at the moment to foster the creation of links between the local human capital and the private sector through paid internships. The programme selects recent graduates from local universities and technological high schools for paid internships co-financed by the local government and local SMEs. Selected candidates also undertake training in socioemotional skills to improve their work performance. The objective is to increase the professional experience of recent graduates and meet the labour market demand from local firms. The programme was implemented in 2017 and is already working with over 700 local firms. It has an annual budget of MNN 24 million that benefited over 1 000 interns during its 1st year and had a hiring rate of 70%. In comparison to an earlier programme "*Manos a la obra*" that had a similar objective, the current programme has significantly expanded the coverage in terms of interns, local SMEs and number of municipalities served (Government of Hidalgo, 2018[28]).

Despite the progress achieved to foster linkages between academia and local firms, higher education institutions still appear irresponsive to the mismatch between educational programmes on offer in their institutions, and the current as well as future demands for skills and knowledge-intensive human capital needs. This reinforces a vicious cycle where higher education graduates in Hidalgo often choose to leave and take their valuable human capital elsewhere and local firms prefer to recruit from out of the state. In this regard, the state government has the competencies to influence the curriculum of public universities and steer them towards programmes that better match the current and future skilled labour demand.

Hidalgo could improve education outcomes in the states by considering the following:

- Demand and supply of skills need to be addressed simultaneously and in a balanced fashion. There is a need for greater two-way perceptions of the links between local human capital and industrial development, where the economic development strategy also takes the existing human capital configuration of Hidalgo's population as a starting point and attempts to best optimise these resources and skills through the implementation of the economic strategy.

- Local higher learning institutions should be incentivised to have a more local outlook on their role within society. National and even international-based performance criteria are increasingly used to benchmark and measure the output of these institutions. Their faculty and the institutions' executives are appraised according to the international outreach and impact of their work, with unfortunately little and often declining importance to local issues and conditions. As seen above, in Hidalgo there is a considerable mismatch between the higher education graduates and the needs of the local labour market that should be addressed. The government of Hidalgo is already implementing policies in this direction like the Mexican Dual Model of Academic Training and "*Mi primer empleo, mi primer salario*". Its implementation should be strengthened and its reach expanded in order to cover the large cohorts of graduates from the technical high school track.

  The transversal measures CTI2.2 – Consolidate the link between academia and business for the generation of new knowledge applied to the problems and needs of the state productive sector – and CTI2.6 – Build highly specialised human capital in strategic economic sectors – specifically address the issue of human capital improvements. The relation that is being constructed, though, is one where Hidalgo's human capital development policy is subordinate to the necessities of its economic development. While linking education and skills development with local economic necessities is a good first step, the relation must be more bi-directional so as to truly develop a forward-looking proactive system that will not only deliver the future human capital requirements but whose graduates will also become active agents that will drive the path towards the state's strategic aims.

- Innovation abilities and skills will be key success factors for Hidalgo's transition to a higher value-added knowledge-based economy, as stated in its strategic plan. But there is generally low or inexistent investment by these firms in training for innovation and innovation management. These skills could more easily be developed by local firms through greater collaboration with higher education institutions. Unfortunately, universities are currently only turned to by local companies in order to request human resource or social services. In this sense, the Council for Human Capital of the State of Morelos is a good example of how to begin the institutionalisation of linkages between the local higher education institutions and the private sector (see Box 2.6).

Box 2.6. The link between academia and business

The Ministry of Economy of Morelos created a body called the Council for Human Capital of the State of Morelos whose mission is to promote and achieve economic development based on a strong investment in human capital, innovation and cross-sectoral collaborations.

The state Ministry of Economy played a crucial role in creating the conditions for the Council to become operational. However, it has now been constituted as an independent civil association. The Council is integrated by local business associations, representatives from higher education institutions, government representatives, unions and research centres. The president of the board is the Consejo Coordinador Empresarial de Morelos (local business association).

The institutional structure of the Council is organised around five working groups (government, education, the private sector, syndicates and social organisations) and nine sectorial technical groups to which working group members participate. Each of the sectorial groups below corresponds to a priority sector. Around these sectors, the Council has defined a number of programmes that it will launch in different phases and that aim to mobilise multiple stakeholders from all walks of life. The following technical groups have been identified: i) white economy; ii) tourism; iii) research and education; iv) construction; v) agriculture and fishing and agro-industry; vi) renewable energy; vii) teleworking; viii) high technology; and ix) logistics.

In order to further shape the Council into an effective institution to lead human capital development in Morelos, the OECD recommended that the nine priority sectors by economic activity and thematic areas should not be treated as silos, as that may impede cross-fertilisation between them. Instead sectoral and thematic areas (research and education, renewable energy, high technology and logistics) should be organised around a matrix that ensures sectors benefit from the synergies of thematic areas and working groups of the thematic areas should participate in all sectorial activities to spread common knowledge.

Source: OECD (2017[23]), *OECD Territorial Reviews: Morelos, Mexico*, http://dx.doi.org/10.1787/978926426 7817-en; Consejo de Capital Humano de Morelos (n.d.[29]), http://consejocapitalhumano.mx/acerca/ (accessed 15 October 2018).

Entrepreneurial and SMEs ecosystem

New and small businesses are often a driving force of innovation and knowledge diffusion, they respond to new or niched demands and social needs, and contribute to the empowerment and inclusion of marginalised groups. In the OECD area, small and medium-sized enterprises (SMEs) account for 60% of total employment and generate 50% to 60% of value-added on average (OECD, 2017[30]). Entrepreneurship is hence an important instrument for economic growth mostly because new firms generate employment, bring innovation to the market and increase overall industrial productivity through increased competition (Van Stel et al., 2005). In the case of an economically defined territory such as Hidalgo, entrepreneurship can be most useful as a means to economically optimise under-utilised local human capital. When the labour market does not offer enough opportunities for local residents to make optimal use of their personal

capacity and talent, the entrepreneurial route is often an alternative way that can help to channel the benefits of this human capital to the local economy.

Entrepreneurship can also have a significant impact on Hidalgo's local innovation system. Innovative entrepreneurship can have many local spillover benefits (OECD, 2012[31]) Entrepreneurship and innovation, combined, can improve the economic competitiveness of the area; they create economic growth and new wealth for the locality; and ultimately, they improve quality of life for local residents.

In Mexico, SMEs account for 99.8% of enterprises and 72.3% of employment. This is a significantly greater share than in most other OECD countries. Another particular characteristic of the SME sector in Mexico besides its size is its high share of very small enterprises. Microenterprises (employing less than 10 people) account for 96.1% of all businesses in Mexico. However, they have low productivity (contribute to 18% of Mexico output compared with 40% of employment). Their low productivity is partly tied up with their higher levels of informality (OECD, 2013[32]).

Hidalgo has a wide range of tools to support entrepreneurship...

The promotion of entrepreneurship, innovation and the development of new strategic industries is one of the four key axes of Hidalgo's economic development strategy. So is the creation of an adequate business ecosystem and the strengthening of existing businesses. In this sense, the state administration has established a series of programmes and strategies that are directly aimed at stimulating entrepreneurial activity and culture in Hidalgo.

The state's Secretary for Economic Development (SEDECO) is actively collaborating with Hidalgo's Business Competitiveness Institute (IHCE) and the Sub-Secretariat for Economics to deliver a concerted support mechanism for Hidalgo's entrepreneurs, SMEs and/or potential entrepreneurs. The IHCE has different functions that range from training and assistance to start a business or offering high tech services like 3D printings for porotypes (Table 2.4), to collaborating in the co-ordination of financing for SMEs.

Table 2.4. Functions of the Hidalgo Institute for Entrepreneurial Competitiveness

Main functions	Objective
Human Capital Formation	- Provide practical knowledge and skills to entrepreneurs and business owners through courses, workshops, mentoring and consultancy services. This will increase their professionalisation and strengthen productivity and competitiveness of local SMEs.
Entrepreneurial Training	- Provide step by step assistance for creating new companies. For example, suitability of products for the local market, creating a bar code, registering a brand name, etc.
Technological Oversight	- Provide relevant and timely information about recent technological research, new technology, etc.
EmpreRED	- Link and connect entrepreneurs and SMEs from all municipalities of Hidalgo.
Design Lab	- Foster firms design through technological innovation and focusing on priority sectors for the local economy. - Provide services of 3D printing to test prototypes.

Source: Data provided by Instituto Hidalguense de Competitividad Empresarial.

Of these efforts, a diversity of economic support measures to entrepreneurial ventures and SMEs are available in Hidalgo. Most of these are captured within the framework of the "*pon tu negocio, yo te apoyo*" (Set up Your Business and I Will Support You) programme. The programme is co-ordinated by SEDECO in conjunction with the Federal Government, through the Nacional Financiera (NAFIN), the National Institute of the Entrepreneur (INADEM) and Commercial Banking. The objective of the "*pon to negocio, yo te apoyo*" framework is to co-ordinate federal entrepreneurship programmes and increase the financing funds for local SMEs. Considering the great diversity of federal programmes to support entrepreneurship and SMEs, this framework to liaise between the federal and local level is a step in the right direction to simplify access to credits.

The "*pon tu negocio, yo te apoyo*" programme offers financial support to new and existing SMEs falling into specific sub-programmes addressing particular segments of Hidalgo's entrepreneurial fabric. The financing schemes offer accessible interest rates in comparison to commercial banks, less red tape and orientation to formalise SMEs in addition to training for the development of business plans. The programme has specific measures for young entrepreneurs, others for women entrepreneurs and several aimed towards business owners whose firms are active in specific sectors of the economy (fashion and textile, construction, restauration and agro-foods, among others). These latter measures aim to encourage modernisation, innovation and value-adding investments of Hidalgo's SMEs.

The *OECD Studies on SMEs and Entrepreneurship: Mexico* found that decentralisation of competencies and budget to the states is key to achieve national-local coherence (OECD, 2013[32]). In that sense, it recognised the importance of co-funding and co-selecting arrangements with the SME Fund (now called National Entrepreneur Fund). Such arrangements create incentives and opportunities for states and municipalities to run intermediary organisations for policy delivery. However, further co-ordination on the SMEs' policy in Hidalgo should be pursed. In particular, the simplification of the National Entrepreneur Fund operating procedures will facilitate co-funding by local level partners (OECD, 2013[32]).

Hidalgo's entrepreneurs can count on the support of the *Fondo Nacional Emprendedor* (National Entrepreneur Fund). This fund can be accessed through an area of the IHCE responsible for linking the programmes of INADEM at the federal level and facilitate their access to Hidalgo's entrepreneurs and SMEs who participate in the initiatives of SEDECO. The programme assists Hidalgo's entrepreneurs and SMEs through the support of integral productive projects in favour of increasing their competitiveness and improving the economic situation of the State. Support provided by this fund includes quality accreditation and certification, fostering technological upgrades and organisation of networking events with transnational companies and new suppliers. Other states have benefited from this programme, particularly with the aim to create strong linkages between local SME's and innovative FDI. Querétaro, in particular, made an interesting use of the National Entrepreneur Fund (previously SME Fund) as a vehicle to link local SMEs into international supply chains (see Box 2.7).

Box 2.7. Linking local SMEs with innovative FDI

Querétaro and INADEM

The SME Fund was a federal initiative in which state governments could co-fund on one-to-one basis programmes and projects that addressed local problems. Overall, the SME Fund has proven a valuable policy co-ordination tool although a scarcity of resources at the state level has resulted in unequal contributions from federal and state governments. In Querétaro, there are opportunities in the automobile and auto parts sectors, in which the state has specialised since the 1960s, and more recently in the emerging aerospace sector (with the Canadian firm Bombardier as an anchor firm). The presence of international firms in these sectors has led the state government to place a strong emphasis on the local implementation of the national Supplier Development Programme in its use of the SME Fund.

The programme provides a vehicle to link SMEs into international supply chains through quality accreditation, technological upgrades and the organisation of events for established transnational companies to meet potential new suppliers. It has also been used to transpose manufacturing knowledge from the existing automotive sector to the expanding aerospace sector.

The state was responsible for developing the approach's design, which included close collaboration with the relevant local support institutions. Thus, efforts to develop local suppliers have been co-ordinated with local business incubators (particularly the high technology incubator) and with the technology centres of the National Council of Science and Technology (CONACYT) that are hosted in the state.

Source: OECD (2016[271]), *Job Creation and Local Economic Development 2016*, http://dx.doi.org/10.1787/9789264261976-en.

Enhancing the scope of soft assistance measures for entrepreneurs

Hidalgo's support also relies heavily on soft assistance measures such as administrative simplification, training, human capital development, networking opportunities and business advisory services. An example of this is the *Sistema de Apertura Rápida de Empresas* (Rapid Business Opening System). This administrative simplification effort aims to identify and simplify the basic municipal procedures for the opening and operation of new businesses. The aim of the effort is also to facilitate their resolution in an agile and expeditious manner by the corresponding municipal office (permits, licenses, land-use, etc.), in a maximum 72-hour period.

Another example of Hidalgo's soft assistance measures is the State's entrepreneurial capacity development programme. To promote greater and better entrepreneurial activity in Hidalgo, an entrepreneurial capacity development programme has been implemented. This capacitation programme is based on the following four main phases:

- *Entrepreneurial culture*: The promotion of an entrepreneurial culture and mindset within Hidalgo's population is achieved through events, conferences and workshops where local entrepreneurial examples and potential role-models are celebrated and presented to the population. In these events, entrepreneurship and the entrepreneurial career is explained, as well as its potential benefits.

- **Idea and project development**: The development and implementation of good business ideas and projects are encouraged through many different measures, such as incubation programmes, assistance in securing the necessary financial and seed capital, and project development consultancy, among others.

- **Business creation**: This phase concentrates on the launch of the entrepreneurial ventures and includes measures such as financial support, assistance with developing networks and social capital, grants, as well as legal assistance.

- **Business development and growth**: The assistance delivered in this phase serves to help entrepreneurs to scale-up their ventures and expand into new markets and industries. The assistance offered helps entrepreneurs secure venture capital, formalise strategic alliances, access federal grants as well as other forms of financial support.

The four-phase capacitation approach allows entrepreneurial support in Hidalgo to be more comprehensive and thoroughly serve the initial life-cycle of the entrepreneurial venture. When entrepreneurial support is only focused on the business creation event, entrepreneurs are often left unaccompanied during the post-start-up phase. The post-start-up phase, which roughly accounts for the first three years of a business's life, is often filled with complexities. This is when a large proportion of entrepreneurial ventures fail. Sustaining entrepreneurial support and accompaniment throughout this critical phase of a venture's life, as Hidalgo is implementing, greatly contributes to reducing premature business mortality.

In complement to Hidalgo's entrepreneurial capacitation programme, the state counts on an intensive network of business incubators. Hidalgo has a total of 19 different incubators that are meant to offer services and support a diversity of different types of start-ups. Most of these serve the start-up phase and the initial years following the launch of the venture. But others offer more 'pre-incubation' accompaniment and support, aimed towards the idea and start-up project development phase that precedes the creation of the venture. Other incubators in Hidalgo serve more as business accelerators, helping firms that have past their initial creation to consolidate their business and grow to higher levels of business competitiveness.

Of Hidalgo's 19 business incubators, a total of 13 are associated with higher learning and research institutions. Two more are directly focused on high-technology industry start-ups and ventures and three are identified as high-impact business incubators. This is in clear coherence with the state's strategy to prioritise knowledge-intensive business creation found in Hidalgo's Development Plan 2017-22 in the transversal measure CTI2.5 – Generate programmes to support the creation, development and consolidation of innovative businesses. However, the incubators' programmes are skewing the business creation and business development phases of the entrepreneurial towards a very limited proportion of potential entrepreneurs.

The bulk of Hidalgo's entrepreneurs that do not fit the "high-impact" profile are served by the state's four remaining business incubators. These cater only to specific segments of entrepreneurs; one is aimed towards agro-entrepreneurs, another towards women entrepreneurs, a third is specialised on entrepreneurs transitioning from the labour market, and finally, a fourth incubator is dedicated on serving entrepreneurs with disabilities. Hidalgo would benefit from having a more inclusive entrepreneurship support policy, especially in what accounts for post-start-up assistance for entrepreneurs.

While Hidalgo's economic strategy, as well as its State Development Plan 2017-22, have key pillars that seem to prioritise the establishment of a science, technology and innovation-based economy, Hidalgo has programmes that propose to use entrepreneurship for more than just technological transfer to the economy. It has, in particular, some measures within its plan that propose using entrepreneurship as a multifunctional tool to help achieve many other socio-economic goals:

- Entrepreneurship is therefore proposed as a tool to help the economic empowerment of women and individuals in vulnerable economic situations. The sectorial plan has two strategies on this front:
    o Focus the attention on women (See Box 2.8), people in vulnerable situations, interested in starting a self-employment project.
    o Agree with public and private institutions on actions that allow people in situations of vulnerability access to resources to develop their business idea.

Hidalgo can take advantage of international experiences on this front to ensure a successful and wider implementation of programmes to benefit women's entrepreneurship. Developing a network, promoting work-life balance and establishing role models of successful cases can generate a relevant impact in women-led business.

- Entrepreneurship is also used as a tool to help people transition out of informal employment, thought two strategies:
    o Encourage the formalisation of microbusinesses and small businesses (see the section below on mitigating informal business activity).
    o Promote productive integration and co-operation for the local economic development of micro- and small enterprises.

- Hidalgo also turns to entrepreneurship, specifically social entrepreneurship, as a means to help spur greater social responsibility within the local business fabric by empowering the population of Hidalgo with the installation of socially responsible and inclusive businesses.

- Similarly, the State Development Plan calls on encouraging entrepreneurial ventures as a way to help give value and preserve local heritage and traditions through the promotion of artisanal activity and the preservation of traditional festivities of the state.

Box 2.8. Fostering women's entrepreneurship

The implementation of targeted policies and programmes to support women's entrepreneurship and self-employment can be argued considering that women are under-represented in entrepreneurship in comparison to men and closing the gap would result in welfare gains. In addition, there is evidence that women are held back in entrepreneurship by institutional and market failures, including discouraging social attitudes. Finally, there is some evidence that women have a lower awareness of public support programmes and that in-take mechanisms favour male entrepreneurs. However, policy can support women entrepreneurs by:

1. **Promoting a positive attitude through role models and ambassadors**: Role models can play a crucial role in developing an entrepreneurial spirit and have

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demonstrated an ability to influence an individual's entrepreneurial propensity through positive representations.

2. **Develop entrepreneurial skills through training courses and mentoring**: Training programmes for women usually provide the same content than mainstream courses. However, there is evidence that women-only programmes are more effective and in-take mechanisms for mainstream programmes can potentially be gender-biased since they may not account for the different characteristics and needs of women entrepreneurs (i.e. women are often excluded from growth-oriented programmes because women-owned businesses are traditionally smaller).

3. **Facilitate access to finance through financial literacy and a range of financial institutions:** Policies to support entrepreneurs in accessing funding are rooted in addressing market failures, including information asymmetries and funding gaps. Offering microcredit to women entrepreneurs is common.

4. **Build entrepreneurial networks and ensure linkages to mainstream infrastructure:** Networks for women entrepreneurs should not reinforce gender differences by isolating women from mainstream business service providers and other stakeholders from other communities. A common approach to building networks is to create them around other policy interventions such as training or other business development services.

5. **Promote work-life balance and access to social protection:** First, family and tax policies should support women's participation in the labour market in general. Historically, public policy related to women and families and aimed at their protection almost entirely focused on women as employees, but policies need to be adapted to self-employment.

Women's Enterprise Centre Initiative, Canada

The network of Women's Enterprise Centres (WECs) was established in 1994 as an effort to better address the challenges faced by women entrepreneurs. WECs, present in each of the four provinces of Western Canada, are operated by non-profit organisations, and are awarded five-year renewal contracts to offer advice, business planning assistance, mentoring, networking opportunities, information and referrals to accountants and lawyers and specifically to women. They also deliver loan funds targeted at new or existing businesses owned by women. The WECs have provided a one-stop-shop for women entrepreneurs.

Some of the most significant impacts achieved by this programme have been on: further developing their business, management and personal skills; increased their access to other programmes and services through information resources; and enabling them to network. The impact of the loan programme was also significant. Overall, clients attribute 55% of their current businesses revenues to the services provided by WEC.

Sources: OECD/EU (n.d.[33]), *Policy Brief on Women's Entrepreneurs*, OECD/European Union, Paris; OECD, (2013[32]), *Mexico: Key Issues and Policies*, https://doi.org/10.1787/9789264187030-en.

A good example of the Hidalgo's innovative approach to entrepreneurship promotion can be found in its *Hidalgo Emprende* (Entrepreneurial Hidalgo) strategy. *Hidalgo Emprende* has been established with the aim of mapping out and linking all the relevant actors of Hidalgo's entrepreneurship ecosystem. In this way, a better supply of assistance measures can be offered by the many actors (such as business incubators, accelerators, higher learning institutions, chambers of commerce and related consultancy firms among others) involved in delivering entrepreneurial support services and infrastructure in the state.

Hidalgo Emprende links together the individuals, institutions and organisations that supply advice, training, finance and general assistance to entrepreneurs and their businesses. This helps avoid the isolated delivery of institutional assistance and services to the different potential users and participants within Hidalgo's entrepreneurship ecosystem. Such a co-ordinated support framework also helps to avoid duplications and inefficiencies as well as encourage better communication and the transfer of information relative to good practices and innovative methods that can be repeated by others in the network.

Hidalgo Emprende's approach to entrepreneurship support is at the vanguard as it deliberately focuses on the person rather than the business plan. This is good for the effective development of local entrepreneurial talent since entrepreneurship is not a one-off event. Studies report that between one-third and one- half of business creators have had previous entrepreneurial experience (e.g. Sarasvathy, Menon and Kuechle (2013[34]) and Westhead and Wright (2015[35]). It has been found that individuals with past entrepreneurial experience, even informal entrepreneurial experience, tend to run ever more successful, innovative and internationally-oriented businesses over time (McGrath, 1999[36]; Ucbasaran, Westhead and Wright, 2009[37]; Vaillant and Lafuente, 2018[38]). This is due to the fact that the capabilities and know-how necessary to run a business have a predominantly experimental nature. Therefore, the fact that *Hidalgo Emprende*'s approach to entrepreneurship promotion focuses on the person instead of the venture allows it to develop successful entrepreneurial careers consisting of a multitude of ever-improving ventures, instead of one-off projects.

...but there is a need to be more strategic and better align the existing elements of the entrepreneurial policy

The entrepreneurial support policy advanced by Hidalgo's state administration should better align existing local programmes. A more strategic view will help them make better use of federal programmes and foster better co-ordination synergies among all levels of government. There seems to be an unbalanced approach to entrepreneurship policy as an instrument to achieve broader socio-economic goals and as an element in the science and technology priorities.

Hidalgo's network of business incubators risks over-focusing on high-impact businesses that prioritise high-technology ventures. Hidalgo should avoid skewing its entrepreneurial policy on either "high-impact" entrepreneurship or sector-specific entrepreneurship. Such policy orientation might lead to sub-optimal outcomes since it excludes many potential novice entrepreneurs that start with modest firms, gain entrepreneurship specific experience and then later move towards more complex ventures that optimised this accumulated experiential business know-how. Focusing largely on what is deemed as high-impact or technological entrepreneurship often sets the bar too high for novice entrepreneurs and is equivalent to placing barriers to entry to an entrepreneurial career for many who could potentially develop to becoming "quality" entrepreneurs in the future. In

fact, empirical evidence in OECD countries shows that fast-growing new firms are not necessarily only in technology- or knowledge-based sectors (although prominent) and can be found in both manufacturing and services (OECD, 2013[39]).

What is meant by quality entrepreneurship is businesses with some innovative element. These will not necessarily be only among the entrepreneurs that are human capital intensive but encompass a broader idea of entrepreneurship. An effective solution is a two-track system with an intensive track for growth-potential businesses (more likely but not exclusively high human capital and technology) and a less cost-intensive track for other entrepreneurs. This encourages a vision where businesses with growth potential span other sectors than high technology (OECD, 2013[39]).

It is important for the state's policy to capitalise on the learning benefits of past entrepreneurial experience, even though the experience has not been successful. It should be acknowledged that business failure does not equate to individual failure and that entrepreneurial experience no matter the industry or degree of formality equates to valuable entrepreneurial learning and better entrepreneurial talent. In a context of complex economic and institutional conditions as well as past economic stagnation such as Hidalgo, business failures are not only caused by entrepreneurs' mistakes, but mostly by exogenous factors that indiscriminately affect business performance. Policy should encourage entrepreneurs to re-enter entrepreneurship and continue their entrepreneurial career no matter the outcome of their past entrepreneurial experience, through awareness and mentorship programmes within the current institutional framework.

Hidalgo Emprende's approach to entrepreneurship together with the soft assistance measures put in place by the IHCE are a step in the right direction towards "quality" entrepreneurship described above and to capitalising with previous entrepreneurship activities.

Considering the high levels of informality in Hidalgo and the preponderance of microfirms in Mexico, there is a gap in Hidalgo's entrepreneurial policy for these types of firms. Policies tailored for microfirms are particularly important for the reduction of informality. Within the current framework of "*pon tu negocio, yo te apoyo*" there are few financing options for informal microfirms that seek to formalise their business, there is only the "*Mi Primer Crédito*" (My first credit) scheme. However, this scheme is insufficient to service the number of informal businesses in Hidalgo (see the section below on mitigating informal business activities).

Overall, what the state government is lacking is a strategic view for entrepreneurship. This would foster better co-ordination among the existing elements of the entrepreneurial ecosystem. The strategic vision should encourage the creation of strong linkages between the financing schemes, the work of local business incubators (mostly linked with higher learning and research institutions) and the soft assistance programmes provided by the IHCE. Joint collaboration can facilitate the identification of quality entrepreneurship as well as gaps and imbalances that can be addressed. The strategic view can better integrate the socio-economic dimension of entrepreneurship and the science and technology priorities established in the State Development Plan.

A better co-ordination strategy among the state level entrepreneurship programmes will also improve the co-ordination with the local and federal levels of government. The institutional structure of the National Entrepreneur Fund creates incentives for strong intermediaries that can make the credits at the local level available. A simplification of the National Entrepreneur Fund's process would make it more efficient. However, it can

still be a useful tool for local entrepreneurs. As seen in the example of Querétaro, this fund can be instrumental in fostering linkages among local SMEs and the new FDI.

In order to exploit the multi-functionality of entrepreneurship, especially if the state is to create positive synergies with its innovation policy, Hidalgo should consider the following:

- Promote the presence of entrepreneurial drive that is capable and willing to take controlled risks by implementing innovative business processes, products and strategies.

- Research and higher learning institutions must be sufficiently agile to facilitate collaboration with entrepreneurs and their ventures. In addition, universities should be encouraged to promote graduate entrepreneurship. Although university business incubators already exist, they should be encouraged to organise business plan competitions and incorporate entrepreneurship as part of the curricula.

- Foster a market perspective from the very beginning of the research and development process. For innovation to be valuable from an entrepreneurial point of view, it must be technically feasible, socially (market) desirable and economically viable. Whereas the scientists and engineers that work for research centres tend to take the first criterion into consideration, they are generally not as concerned by the remaining two criteria: desirability and viability. The collaboration of experienced entrepreneurs within the innovation process from its inception allows for innovations that are more easily transferable and compatible as a business opportunity.

Some bottlenecks exist that limit knowledge transfer. One of the main obstacles limiting innovation and knowledge transfer in Hidalgo is the lack of linkages between business and knowledge centres, especially universities (*Secretaría de Economía*). The regulatory framework imposed on universities is said to be partly responsible for establishing constraints that discourage early collaboration with local SMEs in areas of research and development.

The strategic thinking of both institutions and businesses in Hidalgo is also accused of often being too driven by short-term results to lead them towards longer-term research and development collaborations. Similarly, local businesses in Hidalgo, notable micro- and small businesses, usually do not have the financial or human capital necessary to effectively contribute to an innovation development and transfer process. The State Development Plan proposes many measures to help palliate these deficiencies; however, until now, the national and state public resources towards the process has been described as insufficient.

Innovation

Innovation is today a major driving force for economic growth across OECD countries. Furthermore, the speed of innovation generation is constantly increasing, making innovation a basic requirement for competitiveness. OECD economies that are not conducive of innovativeness have little chance of economic prosperity in the knowledge-based activities.

In Mexico, it has been found that there is a positive relationship between innovation, GVC integration and productivity levels (OECD, 2017[2]). Mexico as a whole has been able to catch up with the OECD average in terms of R&D expenditure, standing above

0.6% of GDP (OECD, 2017[2]). The country's objectives are to reach 1% of GDP in the near future. The federal government's Innovation Development Programme 2013-18 and Special Programme for Science, Technology and Innovation 2014-18 (PECITI) has had much to do with these results.

Hidalgo's administration has set innovation as a transversal policy…

The innovation performance of Hidalgo's industry has been lagging behind, without experiencing much of Mexico's increased R&D expenditure. The reason for this largely rests on its industrial structure. The current Hidalgo's administration has set a series of initiatives that aim to remedy this deficit in R&D investment in its State Development Plan 2016-22. The promotion of Hidalgo's science, technology and innovation has been set as a transversal axis within the State Development Plan.

Specifically, Hidalgo's state Development Plan aims to "consolidate a knowledge society and economy in the state of Hidalgo, making scientific, technological and innovation development the basis of its sustainable economic and social progress." In this sense, the transversal strategies of science, technology and innovation are:

- **CTI1**. Increase the effectiveness, closeness and transparency in government management through the development of knowledge, technology and innovations that contribute to the digitalisation of the State Government and the municipalities.

- **CTI2**. Consolidate a solid, dynamic and diverse economy based on science, technology and innovation that generates sustainable development in the productive sectors and activities of the state and contributes to the social and economic well-being of the Hidalgo population.

- **CTI3**. Consolidate a knowledge society through the creation of scientific and technological capabilities that promote a comprehensive and balanced development of all regions and industries of the state.

- **CTI4**. Generate the conditions of peace, security and governability necessary for economic and social development through scientific research, technological development and innovation.

- **CTI5**. Promote sustainable development through the generation and use of knowledge for the proper and responsible use of natural resources.

Similarly, Hidalgo's policy aims to create an ecosystem conducive to innovation and high-impact entrepreneurship, by strengthening the technology park network, talent management, scientific capabilities and state technologies according to the challenges and opportunities of the global economy. The Council of Science, Technology and Innovation of Hidalgo (Citnova) is the body in charge of promoting the development of science and technology in the state by increasing the technology infrastructure and supporting students to either pursue a higher education programme (PHD) or join the labour market. It also channels resources from the National Council for Science and Technology (CONACYT) to deliver scholarships for higher education.

The state has technology infrastructure but it can be further expanded. Hidalgo has three science and technology parks: Pachuca City of Knowledge and Culture; the Scientific and Technological Park of Hidalgo in San Agustín Tlaxiaca (hosts the Citnova); and the Center of Technology and Business in Ciudad Sahagún. Pachuca City

In the particular case of Citnova, it is important to better define its role in the innovation ecosystem and its functions, including mutual goals with other levels of government and an action plan shared by all the stakeholders. It would also be desirable for the council to work closely with the state Secretary of Education and local universities to define its priorities.

Box 2.9. Innovation beyond R&D and sciences and technology

There is growing recognition that innovation encompasses a wide range of activities R&D to organisational changes, training, testing, marketing and design. Innovation is defined as the implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations (OECD/Eurostat, 2005[46]). Four types of innovation are defined by the Oslo Manual:

Product innovation: A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software, user-friendliness or other functional characteristics.

Process innovation: A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.

Marketing innovation: A new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

Organisational innovation: A new organisational method in business practices, workplace organisation or external relations.

By definition, all innovation must contain a degree of novelty. The Oslo Manual distinguishes three types of novelty: an innovation can be new to the firm, new to the market or new to the world. The first concept covers the diffusion of an existing innovation to a firm – the innovation may have already been implemented by other firms, but it is new to the firm. Innovations are new to the market when the firm is the first to introduce the innovation on its market. An innovation is new to the world when the firm is the first to introduce the innovation for all markets and industries. Innovation, thus defined, is clearly a much broader notion than R&D or technological change and is therefore influenced by a wide range of factors, some of which can be influenced by policy.

Sources: OECD (2015[41]), *The Innovation Imperative: Contributing to Productivity, Growth and Well-Being*, https://doi.org/10.1787/9789264239814-en; OECD/Eurostat (2005[46]), *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition*, https://doi.org/10.1787/9789264013100-en.

Improving integration of business and academy

The innovation strategy should also aim to involve and empower other stakeholders in building and conducting the policy. A more bottom-up leadership is likely to rally and maintain a more durable and less politicised momentum for the innovation process.

Innovation policy should enable firms to adopt forms of work organisation that support innovation. OECD research indicates that different models of work organisation adopted by SMEs can be related to differences in their innovation performance (OECD, 2015[41]). For instance, SMEs that adopt a "learning organisation" or "discretionary learning"

model, associated with teamwork, performance incentives and greater employee discretion in the planning and execution of tasks, have greater levels of product and process innovation and greater inter-organisational co-operation, relative to more traditional and hierarchically organised SMEs (OECD, 2015[41]). IHCE should support SMEs and entrepreneurs with guidance on this process to attain a fertile innovative environment among local business.

Human capital and a skilled workforce are also a cornerstone for innovation and a variety of disciplines and levels of skills can contribute to it. OECD research has shown that participation in innovation varies across types of innovation (OECD, 2015[41]). For instance, graduates in arts and engineering have the same likelihood of participating in product innovation, while engineers are significantly more likely to have a job involving technology innovation research (OECD, 2015[41]). The region's overall skills supply is comparatively low, with a lower share of research centres and knowledge-intensive business services than neighbouring regions. A key priority to upgrade skills is to further strengthen the structures for knowledge transfer between the region's universities and research actors and local trade and industry.

Hidalgo should hence implement a triple helix partnership in order to create a wider innovation ecosystem and address the skills needed in the workforce. This type of partnership should also foster a demand-led approach to innovative projects from the private sector (involving different levels of firms). It means that the private sector can define the skills needed to develop an academy as well as design and provide training programmes. It is important to ensure this approach leads to an open-innovation model where innovative firms and research centres can share ideas within the same environment. The innovation system in Brainport in the Netherlands can guide the effort of Hidalgo to create this partnership and spur innovation through a collaborative work among stakeholders (Box 2.10).

Innovation should be also viewed as a mechanism to decrease inequalities in the state by tackling the problem of "dual economies" where innovative and technologically advanced firms coexist with traditional and low productive sectors. Supporting innovation in established SMEs especially in the northern areas can foster inclusive growth by reducing productivity gaps and wage gaps between small and large companies. Inclusive innovation policies address this problem by:

- Facilitating their access to technologies or organisational innovations created elsewhere that could be useful in increasing their productivity.

- Promoting small-scale innovations in less innovative sectors, particularly encouraging traditional industries to undertake R&D projects.

- Supporting SMEs from more disadvantaged groups to overcome barriers.

For a regional innovation system, civil society should be perceived as a producer and user of knowledge, thus the interests of the local population should be represented and different dimensions of well-being taken into account in the programme design and implementation (OECD, 2017[23]). Hidalgo should spread knowledge to municipalities about its current innovation policies and strategic sectors in an effort to mobilise not only key actors from civil society but also all governmental actors of the state, particularly those in rural and indigenous communities. Connecting these communities to the state's strategic goals will be critical for inclusive growth.

Considering the government is a critical provider and regulator of public services of which marginalised communities are often excluded from inclusive innovation will also require a degree of social innovation. For example, to carry out the Sao Francisco national project in Brazil that would bring potable water to 12 million people, civil society organisations were involved in the project's social and environmental programmes and decided jointly on social issues. As a result, citizens have access to health and education services and technical assistance to develop irrigated crops on their land (OECD, 2015[47]).

Box 2.10. Promoting innovation systems

The case of Brainport Development in Eindhoven (Netherlands)

Brainport Eindhoven Region is the industrial high-tech heart of the Netherlands, covering Eindhoven and 20 surrounding municipalities, and is part of the South East-Netherlands (ZON) region. Industrial activity in the region ranges from the manufacturing of complex machines and systems, semiconductor industry to embedded systems for automotive to advanced medical systems and design.

Innovation in the region was previously based on closed organisational forms and mainly driven by Philips. The company's loss of international competitiveness drove it to establish the first knowledge campus and transitioned from a closed model of innovation into an open model by stimulating strong involvement of the private sector.

The innovation system of Brainport is to an important extent business-driven, powered by entrepreneurial leadership and strong collaboration between industry, knowledge institutes and government in the triple helix and ample participative involvement of civil society.

Besides collaboration in the triple helix, its governance depends on how the national, the regional and the local governments co-operate and interact, and how Brainport connects to and collaborates with other regions (domestically and internationally). The most important innovation policy instrument, both in funding size and in popularity, is the national WBSO scheme for a corporate tax deduction of R&D expenditures.

The project management approach consists of a large number of bottom-up initiatives with external project owners. Brainport Development invites the involved firms or knowledge institutes to take ownership of initiatives and projects that are being carried out.

Brainport Development was declared the Intelligent Community of the Year 2011 out of more than 400 participants and won the Eurocities Award in 2010 in the "co-operation" category, for co-operation among companies, knowledge institutions and government.

Source: OECD (2015[47]), *Innovation-driven Growth in Regions: The Role of Smart Specialisation*, https://www.oecd.org/innovation/inno/smart-specialisation.pdf.

Mitigating informal business activities

The informal economy is significant in Hidalgo (see Chapter 1) and is composed of informality in business and employment. Both informal economic units and informal

employment represent related but distinct challenges that authorities must get under control in order to improve the development and growth opportunities for Hidalgo's economy. This section focuses on the informal business unit in Hidalgo and the ways in which the public administration can reduce its presence in the state since informal employment is addressed Chapter 1.

Informal businesses represent over 85% of all economic entities active in Hidalgo (Baez-Morales, 2015[48]). This makes Hidalgo amongst the 5th most informal economies of all Mexican states (Baez-Morales, 2015[48]). Despite several reports that have highlighted the problem of business informality in Mexico (INEGI, 2014[49]; INEGI, 2015[50]), the phenomenon has been found to have increased in importance over the last decade (Baez-Morales, 2015[48]). The informal economy was estimated at 25% of Mexico's GDP in 2012 (INEGI, 2014[49]).

As explained in Chapter 1, a considerable dimension of informality in Hidalgo is related to structural factors such as poverty and is mostly reflected through economic activities like subsistence agriculture. Most of these structural factors should be addressed in co-ordination with federal policies and within a long-run framework. However, there are informal workers and businesses that belong to the induced/voluntary category that can receive further attention from the state of Hidalgo (Chapter 1). In that sense, there are instances where an important component of informality is related to the rational choices of firms to remain informal based on the poor cost-benefit analysis. Workers and businesses in this group have relatively high levels of education and qualifications thus their inclusion in the formal sector through targeted policies can translate into productivity gains for the economy. Targeting the cost of formalisation to both workers and firms, and the limits in the availability of jobs are common policies that contribute to reduce informality (Oviedo, 2009[51]).

Informal business, economic or production units are often difficult to define, and therefore to delimit and measure. There is no single kind of business informality, and, therefore, it is plausible to say that there are different types and degrees of informality. Informal business units can, however, be split into three general categories which are all found in Hidalgo (Baez-Morales, 2015[48]). First, the bulk of informal economic units is made up by the self-employed. This category may overlap with informal employment but is not necessarily always the case. Artisans and service providers may find opportunities in supplying their goods and services without formalising their activity. It can be their primary source of revenue or a complementary activity to supplement formal employment. Second, there are informal business units that are unregistered firms and employers. These firms operate informally and hire unregistered labour to carry out their operations. Finally, the third common form of the informal business unit comes from market-based legal production of goods and services that is deliberately concealed from public authorities. These are formal private or public organisations that undertake some of their operations informally, where both formal and informal labour can be used in the process.

The potential long-term growth benefits of formality are not often perceived by firms who do see the short-term advantages of informality (higher earnings, greater flexibility, and general satisfaction). Furthermore, the benefits of formality can be less apparent in the case of remote areas where infrastructure and public service provision are poor, and where informal protection networks may substitute for the state (de la Torre and Rey, 2016[52]). This is in many ways what is observed amongst indigenous communities of northern Hidalgo. In these areas, formal contracts may not be perceived to provide good

enough services to be worth the contributions. But informality in Hidalgo is not exclusive to the north of the state and is also typical of the small and microfirms in the urban areas in the south of Hidalgo. There are economic inefficiencies associated with the use of public goods by those (informal firms) who do not pay for them.

The high levels of informality in Hidalgo have a direct impact over many aspects of the state's socio-economic well-being. High informality affects Hidalgo's economic growth by engendering a systematic under-optimisation of local human and business capital. Similarly, informality results in underinvestment in a business capacity and opportunity development, which perpetuates economic hardship into the future. Informality also impacts social protections of workers, consumers and citizens in general. The excess of informality in the economy, directly and indirectly, impacts the government revenue generation ability, often impacting local budgets and the ability to provide local proximity services. And finally, tolerance of informality has a socio-cultural impact, where local norms and attitudes towards the rule of law and respect for institutions are affected. This last aspect may be much more significant than it seems for Hidalgo.

The main strategic objective of the sectorial economic plan of Hidalgo is to create more and better jobs to foster better living conditions for families in Hidalgo. It is seen as both an economic and social policy goal, which is supported by the four strategic pillars of the sectorial plan. It ultimately aims to create better quality jobs that contribute to informality reduction.

In Mexico, the sectorial plan has identified that microfirms are the ones that have a lower access to financing (10%), below the access of small and medium enterprises (39.8% and 27.8% respectively). In Hidalgo, improving access to financing for SMEs is a relevant policy considered in the sectorial plan. Within the "*pon tu negocio, yo te apoyo*" framework, the credit scheme "*Mi primer crédito*" (My first credit) is tailored for informal businesses that want to transition to the formal economy. However, considering the huge number of microfirms, there is thus an imbalanced availability for funds targeted to microfirms in the country, more can be done to create incentives for formalisation. Hidalgo could benefit from the experience of good practices at the federal level in Mexico and the experience of other states for financing microfirms (see Box 2.11). These experiences show that training and funds for microfirms can be more effective by targeting associations of agglomerated microfirms (particularly from traditional sectors). A strategy such as this can also reduce the risks of fragmentation of funds.

Box 2.11. Financing and supporting microfirms in Mexico

Modernisation and Integration (Mi) programmes

The federal government in Mexico has carried out programmes to finance microfirms. An example of good practice for this kind of policies is the Modernisation and Integration (Mi) programmes. It aims to help microfirms in traditional sectors to modernise their production processes and integrate into markets. The programme encourages firms to migrate from the informal to the formal sector. To be eligible, enterprises have to register, showing that they have traded for six months.

The programme is structured in 4 stages: i) promotion to attract microenterprises; ii) organisation of the microenterprises into training groups of up to 20 for modularising training; iii) provision of consulting services to smaller groups of 5-8 enterprises and

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6 hours of customised one-on-one consulting; and iv) access to financing for modernisation and improvements (particularly for the acquisition of new equipment).

The following are some of the Mi programmes:

- Mi Tortilla: aims to work with 8 000 tortilla makers in 4 regions and is dealing with approximately 1 000 participants each year.

- Mi México Paradores Turísticos: seeks to promote microenterprise development in the area of touristic villas. The Marquesa National Park was the first location for the roll-out of this project.

- Mi Estética: has been developed in co-operation with the Mexican Chamber of Physical Beauty to advise beauty shops on technical subjects and implement working programmes for better management.

Manos de Morelos

In addition to these federal programmes, there have also been interesting local initiatives to promote the formalisation of microenterprises, such as Manos de Morelos. Manos de Morelos is a crafts association formed and supported through a combination of state and federal funds, bringing together artisans from around the state. After a craft fair organised by the state in 2008, artisans organised themselves into a group. The state has continued to support the organisation through basic training to association members; offered consulting assistance to increase productivity; provided advice on exporting goods; and with state funding purchased new equipment and opened a permanent gallery for their work.

The benefits of institutionalising what is typically a fragmented group of unrelated producers go beyond better production and preventing fragmentation of resources. They have developed a recognisable brand that distinguishes local work and to which notions of quality and tradition can be attached. Equally, co-operation creates learning opportunities, artisans share new ways of producing, as well as new designs, and these innovations can command higher prices.

Source: OECD (2013[32]), *Mexico: Key Issues and Policies*, https://doi.org/10.1787/9789264187030-en.

There is no quick fix for this problem and solutions should be aligned and supported by federal policy. Full compliance may not be the ideal policy objective on the reduction of informality since structural factors may involve long time to be solved, the costs of enforcement can by high and there might be adverse effects on a rapid transition for many informal enterprises. In this regard, international experience suggests that strengthening enforcement works best when the appropriate incentives to formalise are created so that informal firms have a viable transition path from informality into formality (Box 2.12). To do so, fighting informality should be at the heart of a co-ordinated action plan in the state with shared-responsibilities among state secretaries and levels of government. Together with a policy that creates incentives for formalisation, Hidalgo should:

- Build capacities to enforce regulation. It should include sanctions to guarantee the regulation enforcement and develop clear policies in the state.

- Enhance programmes to encourage social mobility, expand tertiary education and move people away from subsistence agriculture. Some of these social programmes should be supported and in line with the federal government.

- Enhance co-ordination within the structure of incentives at the local and federal level.

- At the same time, it is important that Hidalgo's public-sector lead by example by eliminating informality within public administrations and public procurement (see Chapter 4).

Box 2.12. Spanish reforms to combat informality

Spain is a good example of a country that has carried out extensive reforms that led to a dramatic increase in tax collection (the ratio of tax collection to GDP doubled) and a significant reduction in informal employment. The Spanish reform package included five crucial elements: i) it reduced the costs of being formal; ii) it improved its audit technology and increased enforcement; ii) it improved its communications strategy; iv) it modernised administrative processes and functions; v) it provided basic social protection for all.

Source: Oviedo, A. (2009[51]), *Economic Informality: Causes, Costs, and Policies - A Literature Survey of International Experience*, World Bank Country Economic Memorandum (CEM), Washington.

Establishing the public-private partnerships framework in Hidalgo

Public-private partnerships (PPPs) are long-term agreements between the government and a private partner whereby the private partner delivers and funds public services using a capital asset, sharing the associated risks (OECD, 2012[53]). OECD governments and the private sector see PPPs as an effective mechanism to deliver public services both with regards to infrastructure assets (such as bridges, roads) and social assets (such as hospitals, utilities, prisons). PPPs can provide much-needed savings for the public sector and a fair deal for the private sector by sharing the associated risk to the project and combining private sector innovation and financing. However, experiences from OECD countries show that it can be difficult to get value for money out of PPPs if government agencies are not equipped to manage them effectively. Moreover, PPPs can obscure real spending and reduce the transparency of government actions by using off-budget financing (OECD, 2012[53]).

PPP investments tend to be especially important when it comes to improving the innovation system of a territory. The presence of strong externalities and spill-overs makes such investments of public interest, but also bring private sector beneficiaries who are willing to participate in order to make these projects a reality. Having a co-ordinated vision is a key aspect of successfully driving and implementing a local innovation system.

Public-private partnerships (PPP) are still uncommon in Hidalgo. In Hidalgo, public-private "co-responsibility" is identified as a key component of the economic development strategy. Such shared projects have mostly been used when it comes to alternative energy and waste treatment as well as roadwork maintenance projects. Three examples stand out:

- The Tepojaco Renewable Energy Project: This project consists in the production of electrical energy from household and industrial residues. The energy production plant when completed will process on a daily basis approximately

2 000 tons of solid urban waste in order to produce an estimated 55 MW of electrical energy.

- The Tula-Tepeji Regional Solid Waste Treatment Centre and the Pachuca Regional Solid Waste Treatment Centre: Through PPP investments and management, these two independent projects plan to generate electrical energy from solid urban waste and contribute to reusing and recycling solid waste with caloric value so that it can be commercialised as fuel.

- PPP Program for the Conservation of the Federal Road Network 2017-27 (*Pirámides-Tulacinga-Pachuca*): This project, which involves public and private participation, was launched by the Mexican federal government and stretches across the states of Mexico and Hidalgo.

There are several other examples of close public-private collaboration, especially when it comes to industrial development efforts, such as the Tula intermodal and dry-port complex, or Hidalgo's Special Economic Zone that is being proposed. But, although close collaboration is important, it does not represent a PPP joint engagement. Together with co-ordination/collaboration fora, PPPs typically do not include service contracts or turnkey construction contracts, which are categorised as public procurement projects. Nor is the privatisation of utilities where there is a limited ongoing role for the public sector considered as PPPs.

In addition, academia, business, and the government are already linked by the Council of Science, Technology and Innovation of Hidalgo, that promotes interaction and collaboration on joint projects. These include, among others, some technology development and research initiatives. There are also construction projects of areas for networking and training in the Scientific and Technological Park of Hidalgo. But these initiatives are greatly insufficient. They do not exactly fit the definition of PPP agreements as investments and management responsibilities are not equally shared.

To encourage the greater use of PPP arrangements in the state, the government of Hidalgo approved in 2018 a new PPP regulation which brings important benefits in terms of investments. The Law for the Promotion of Private Investment in Public Projects is meant to change the perspective towards PPP arrangements; from a regulatory stance to an incentivising approach on PPP projects. The law proposes some changes with respect to the current law framework in this regard (Table 2.5).

The new legislation does away with the previous PPP law of 2011 that did not include the possibility of private agents becoming the promoters of PPP proposals. The new order implies a permanent call to private agents to apply their creativity and leadership towards the elaboration of projects that favour the strategic objectives of Hidalgo's development.

The law offers an overall comprehensive legislative structure and application mechanism that helps to promote PPP projects and make their implementation more agile. Hidalgo's new PPP legislation includes minor modifications to the Public Debt Law of the State of Hidalgo to adjust its content to the federal norms in matters of financial discipline and accounting harmonisation.

Table 2.5. Characteristics of the draft Law for the Promotion of Private Investment in Public Projects of Hidalgo

Characteristics (selected)	2011 Law on PPP	Law
Formulation of project proposals	Public entity	Private agent
Responsible for operation and maintenance costs	Private agent	Private agent
Responsible for debt, if financing is required	Private agent	Private agent
Payment of studies, opinions and executive projects	Public entity and private agent	Private agent
Acquisition of real estate, if required	Public entity Private agent (in some cases)	Private agent
Responsible for the success or failure of the project	Public entity (design) Private agent (operation)	Private agent

Sources: Government of the State of Hidalgo (2017[54]), *Law for the Promotion of Private Investment in Public Projects of the State of Hidalgo*.

Making the most of the draft law of PPPs

Although the PPPs draft legislation in Hidalgo goes in the right direction to provide a sound legal PPP framework, the state should closely consider the OECD principles for public governance of public-private partnership. These principles can guide Hidalgo to ensure added value from PPP projects, define clear institutional roles and prevent ill-designed projects from going forward (see Box 2.13).

Box 2.13. OECD Principles for Public Governance of Public-Private Partnership

The interest in PPPs has been growing in recent years and the need for fiscal restraint in most OECD member countries is expected to further increase their usage. This presents policymakers with particular challenges that should be met with prudent institutional answers

The OECD Principles for Public Governance of Public-Private Partnerships provide concrete guidance to policymakers on how to make sure that public-private partnerships (PPP) represent value for money for the public sector.

They provide guidance on when a PPP is relevant – e.g. not for projects with rapidly changing technology such as IT, but possibly for well-known generic technology such as roads.

1. **Public-private partnerships require active consultation and engagement with stakeholders:** PPPs may be used to introduce a more private-sector approach to service delivery in sectors that have previously been a part of the government.

2. **Key institutional roles and responsibilities should be maintained**: a sound procurement process; implementing the specific PPP; fiscal and budgeting issues; auditing of the PPP; rule monitoring and enforcement.

3. **Ensure that all significant regulation affecting the operation of public-private partnerships is clear, transparent and enforced**. Red tape should be minimised and new and existing regulations should be carefully evaluated.

4. **All investment projects should be prioritised at the senior political level**. As there are many competing investment priorities, it is the responsibility of government to define and pursue strategic goals. The decision to invest should be separate from how to procure and finance the project.

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5. **Carefully investigate which investment method is likely to yield most value for money**. A procurement option pre-test should enable the government to decide on whether it is prudent to investigate a PPP option further.

6. **Transfer the risks to those that manage them best.** This should involve the party for whom it costs the least to prevent the risk from realising, or for whom it costs the least to deal with the consequence of the realised risk.

7. **The procuring authorities should be prepared for the operational phase of the PPPs.** Particular care should be taken when switching to the operational phase of the PPP, as the actors on the public side are liable to change.

8. **Value for money should be maintained when renegotiating**. Any renegotiation should be made transparently and subject to the ordinary procedures of PPP approval.

9. **Ensure there is sufficient competition in the market by a competitive tender process**. Where market operators are few, governments should ensure a level playing field in the tendering process so that non-incumbent operators can enter the market.

10. **Ensure that the project is affordable and the overall investment envelope is sustainable.** PPPs are more difficult to integrate with the annual budget process than more ordinary expenditures. This makes affordability assessments particularly important when the project is being prepared.

11. **The project should be treated transparently in the budget process.** The budget documentation should disclose all costs and contingent liabilities.

12. **Guard against waste and corruption**. The necessary procurement skills and powers should be made available to the relevant authorities.

Source: OECD (2012[53]), *Recommendation of the Council on Principles for Public Governance of Public-Private Partnerships*, http://www.oecd.org/governance/budgeting/PPP-Recommendation.pdf.

PPPs arrangements tend to be a particularly complex process. Therefore, some specific points may contribute to improving the application of Hidalgo's Law for the Promotion of Private Investment in Public Projects:

- Infrastructure projects must be aligned with the strategic plans of the regional or local government. The financing schemes of projects should impact the development plans thus avoiding institutional laziness.

- There should be a clear strategy around the types of projects financed through PPPs and the regulation of their financing schemes.

- Real competition is essential to guarantee value for money of the investments. Therefore, direct adjudication of projects should be limited to very specific cases.

- Real costs, guarantees and liabilities should be fully integrated into the multi-year budgetary planning of the government.

A robust legal PPPs framework also requires a well-aligned and functional institutional environment. PPPs are conducted by different government departments and on various sectors. The development of local capacities across the government to analyse and enforce regulation is hence important to attain a positive economic and social outcome from the PPPs' projects. To ensure that all secretaries deal properly with PPPs (i.e. in

terms of their budget or to avoid over-commitment), some OECD government have created a special unit to manage PPPs. Hidalgo could consider establishing a unit or expert group to co-ordinate levels of government and manage the implementation of PPPs in the state, the example of Victoria in Australia can be used as a guide (Box 2.14).

Another key action is to clearly define the risks involved in PPPs. One of the main added features in the law of Hidalgo is that it transfers more responsibilities to the private agent. This change is welcome since the private agent is generally more efficient to deal with the demand and supply-side operation risk as well as with the construction risk (OECD, 2008[55]). However, following Principle 6, risk should not be transferred to the private partner in all situations. For example, governments cannot transfer to the private sector the risks associated with the responsibilities for maintaining services. Furthermore, risks that are no clearly defined and identified can impose a barrier to find a suitable private partner, at least for an acceptable price for the state. Hidalgo should hence clearly define and identify the risks in the PPPs' contracts as well as establish clear methods by which risks can be apportioned.

Box 2.14. Partnerships Victoria, a PPP unit in Victoria, Australia

Partnerships Victoria provides the overall policy framework for the Victoria state government in the provision of public services through public-private partnerships. The focus on whole-of-life costing, full consideration of project risks, optimal risk allocation between the public and private sectors, value for money assessment and protecting the public interest are key features of the policy. Approximately 10% of Victoria's public investments have been pursued through Partnerships Victoria.

Partnerships Victoria is the centre of expertise in the PPP area and its role is to be responsible for the policy framework and to assist with key competency. The primary roles of Partnerships Victoria are to: i) develop policy; ii) play an advisory role in project implementation; and iii) set policy and give advice on contract management. For individual projects, Partnerships Victoria provides commercial expert advice, ensures that policy issues are identified and addressed, monitors budgetary issues, maintains the integrity of its policy framework, and facilitates Treasury approval of good projects.

Overall, Partnerships Victoria has an active role in PPP projects without being the owner but providing policy guidelines and expertise. To improve competency both for the public and the private sector, Partnerships Victoria conducts relevant courses and training. The minister responsible for Partnerships Victoria is the Treasurer, and relevant line ministers are responsible for initiating and implementing actual projects. The project approval process includes four key points where the Treasurer's approval is necessary for a Partnerships Victoria project to continue to its next phase. These four points are: i) funding approval; ii) approval to invite expression of interest; iii) approval to issue a project brief; and iv) submission of contract management strategy and arrangements. The responsibilities of the Treasury include the approval of funding and having the minister responsible for Partnerships Victoria bring overall budget issues into the project discussion.

Sources: Partnerships Victoria (2018[56]), https://www.dtf.vic.gov.au/infrastructure-investment/public-private-partnerships; OECD (2008[55]), *Public-Private Partnerships: In Pursuit of Risk Sharing and Value for Money*, https://doi.org/10.1787/9789264046733-en.

Implementing policies to support the competitiveness of Hidalgo

The economic strategy developed by the Hidalgo's secretary of the economy needs to be well co-ordinated with the activities and strategies of the other ministries in the state to ensure strategies and programmes are well aligned and do not undermine each other. When this is the case, policy complementarity gains are possible (see Box 2.15). Hidalgo's economic strategy has already made important progress in several areas, but these strategies need to be well co-ordinated with those by other ministries, particularly those responsible for the enabling factors.

Box 2.15. Adding policy complementariness to the State Development Plan

The concept of policy complementarity refers to the mutually reinforcing impact of different actions on a given policy outcome. Policies can be complementary because they support the achievement of a given target from different angles. For example, production development policy, innovation policy and trade policy all support the competitiveness of the national industry. Alternatively, a policy in one domain can reinforce the impact of another policy. Sequencing is also important in policy complementarity. Some policies are best put in place simultaneously. For example, innovation, industrial and trade policies must be synchronised to address the issue of industrial competitiveness from all angles. Other policies realise their synergies in a sequential way. For example, investments in broadband infrastructure need to be followed up with specific policies on access and diffusing those services to the population.

Complementarities between policies can be "latent", but can be triggered by specific governance arrangements, for example, mechanisms that facilitate co-ordination across levels of government (vertical co-ordination) can help attain complementarity across policies from various levels. Alternatively, they can be induced, by combining different policies through conditionality schemes, or when the complementarities are the result of strategic planning. Employment generation opportunities, for example, can be attached to direct cash transfers to support the inclusion of poor people in production so that they can avoid dependency on income transfers.

Policy complementarities can also be spontaneous when they appear as positive side-effects of independent actions of ministries or bodies.

Source: OECD (2016[14]), *OECD Territorial Reviews: Peru 2016*, http://dx.doi.org/10.1787/9789264262904-en.

State development planning: Axis 2 - A Prosperous and Dynamic Hidalgo

The implementation of Hidalgo's State Development Plan for 2016-222 is necessary for the future prosperity and competitiveness of the state of Hidalgo. The plan defines the core trajectory guiding the direction of public administration.

The regional development plan should be the co-ordinating umbrella that integrates the objectives and strategies of the various ministries to ensure policy responses are adapted to the needs of the territory. Individual objectives and indicators should reinforce each other and be part of common strategic objectives. The current State Development Plan (further discussed in Chapter 4) has too many indicators that could better reinforce each other. Furthermore, the priorities and sequence of the objectives can be further clarified

through the short, medium and long term in the State Development Plan. It can help reduce duplications and gains efficiencies through policy-complementarities.

For example, Axis 2 of the State Development Plan 2016-22 – A Prosperous and Dynamic Hidalgo – has the over-arching goal to strengthen and improve the conditions of the state's economic environment. This includes the infrastructure of innovation and connectivity, economic diversification and legal assurances for conducting business. This is meant to attract talent and investment to Hidalgo. Besides this, the Axis conceives prosperity in a wide sense where economic growth must also be socially inclusive and sustainable.

Axis 2 of the development plan is divided into 5 main lines of action, each with its detailed measures aimed at achieving the set objectives.

- 2.1 **Inclusive economic progress**: Contribute to greater inclusive economic growth that reduces income inequality among Hidalgo's population and guarantees their well-being.

- 2.2 **Dynamic and innovative economic environment**: Contribute to the generation of a dynamic and innovative state economic environment that encourages the attraction and retention of talent and productive investment for Hidalgo.

- 2.3 **Articulation and consolidation of existing productive sectors**: Consolidate the participation of Hidalgo's primary, secondary and tertiary sectors in the generation of value added, articulating them in value chains that contribute to the local development as well as the quality of life of Hidalgo's workers.

- 2.4 **Tourism as a lever for development**: Resize tourism as a socially responsible economic activity, which favours the attraction of investments aimed at generating quality infrastructure and services, as well as local and internal market development.

- 2.5 **Modern and productive agriculture**: Promote a productive, competitive and sustainable agri-food sector that collaborates with food security and safety. Stimulate greater value-added products, with a business approach in the use of technological innovations guided by the synergy between businesses, research centres, producers and financial institutions to achieve quality products, so as to improve the standard of living of the population dedicated to agricultural production.

Each of the five lines of action has its own measurable quantitative targets relative to the base year set before the implementation of the plan, relative to the end of the plan in 2022, and relative to a longer-term perspective in 2030.

To this, three different transversal strategies add to the actions found within Axis 2 of the State Development Plan: gender strategy, youth protection strategy, and the science, technology and innovation strategy. The action lines of these cross-cutting strategies influence and are integrated into all axes of the development plan. Each action line of the transversal strategies bares their own targets and objectives that add to those included to Axis 2 already mentioned above. Overall, several of these areas can complement each other (e.g. dynamic and innovative economic environment and articulation and consolidation of existing productive sectors) and perhaps should share common objectives and targets.

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Whereas the measures needed to reach the set targets and objectives of Axis 2 of the State Development Plan have been well defined in the plan, the distribution of responsibility and allocation of resources over the implementation of each set of measures have yet to be further clarified. For this, the state should create a co-ordination mechanism that can attain complementarities and shared-responsibilities among secretaries. Special cabinets by areas or other forms of joint work can be implemented for this purpose in order to oversee the implementation of each strategic axis (Chapter 4).

An incremental approach to consistency over time

Hidalgo must follow an incremental approach strategy to make the most of FDI investments and ensure consistency of the economic outcomes over time. In such an approach (see Box 2.16), policy purposefully takes short-term decisions to make gains that will serve its longer-run strategy (Vaillant, 2018[57]). It means adopting a real options perspective with a clear strategy where the state's new economic capabilities (i.e. the economic dynamic generated from the new investments and the efforts in strategic sectors) build upon the existing economic ecosystem and competitive advantages to achieve envisioned long-term goals. In turn, the final strategic goals should be based on consolidating the enabling factor that will sustainably boost the productivity and competitiveness of the state of Hidalgo.

Much in the way that SEDECO has initiated its policy, the implementation of Hidalgo's economic strategy must continue to think in terms of a strategic incremental policy approach. Before dedicating too many resources and efforts to developing various initiatives in parallel without clarity of how to enhance complementarities among them and the territory, the administration must achieve short-term results that open the doors to capabilities that allow incremental advances. For instance, trying to enhance at once the five strategic sectors (logistics, energy, agro-industry, electric mobility and pharmaceuticals) can divert the attention needed to build upon the existing results such as the new regulations to improve the business ecosystem and recent inflow of foreign investments.

Implementing this strategy means that Hidalgo's efforts should avoid focusing on the administration's four factors to increase the state's competitiveness (cost, quality, innovation and value-creation). Trying to promote competitiveness with these factors can lead to unexpected consequences if they are developed at different speeds. For example, out of these factors, only one (cost) currently has a significant presence in the state (and only in the south). In the absence of the remaining key factors, firms attracted only by the potential cost advantages will unlikely prioritise value creation and knowledge-intensive development.

Box 2.16. A strategic incremental development policy approach

Because of spill-overs and learning effects, it is often more useful to evaluate the collective contribution to wealth and welfare creation of development initiatives than to assess each policy or measure on its own. The policy that fails to produce concrete short-term results may still improve the skills, knowledge or methods of production (McGrath, 1999[36]). Measures may be pursued with the explicit recognition that they are likely to fail as they are viewed as part of an entire portfolio of economic development policy. What matters is that they enhance the territory's accumulated resource and knowledge base by reducing uncertainty, increasing variety, and expanding the local capability frontier giving access to greater opportunity (Vaillant, 2018[57]).

This strategic incremental approach to territorial development has key posits that are borrowed from the real options' literature for financial investment (Copeland and Copeland, 2003[58]). Options (policy measures in the case of territorial development) are best valued as part of a "bundle". This means that policymakers need to visualise a strategic path of subsequent policy moves that form the steps and tactics by which resource and capabilities are gained at every level, gradually opening new opportunities that were previously unattainable (McGrath, 1999[36]).

Sources: McGrath, R. (1999[36]), "Falling forward: Real options reasoning and entrepreneurial failure", *Academy of Management Review*, Vol. 24, pp. 13-30; Copeland, T. and T.E. Copeland (2003[58]), *Real Options, Revised Edition: A Practitioner's Guide*, A.P. Texere Publishing Ltd., New York; Vaillant, Y. and E. Lafuente (2018[38]), "Entrepreneurial experience and the innovativeness of serial entrepreneurs", *Management Decision*, pp. 1-24.

The incremental approach also requires concrete measures to evaluate the performance and trajectory of the economic strategy. It involves monitoring that the efforts in the economic strategy produce positive effects on the enabling factor and linking these policy outcomes with budget (Chapter 4). To measure the impact of the economic strategy, Hidalgo needs to establish a benchmark in order to determine the baseline and the pressing needs to target firs.

The comparison of the enabling factors in Hidalgo against its benchmark of TL2 regions can depict the bottlenecks in the state. The comparable benchmark is composed by Mexican and OECD regions with similar initial levels of GDP per capita and initial market in 2003 and share of manufacturing in GVA in 2004 (see a detailed analysis in Chapter 1). Hidalgo experiences a larger gap in the high skill labour force (labour force with secondary and tertiary education), patent activity and connection to broadband. However, the largest gap is found in the low level of patent activity (Figure 2.15).

Following the incremental approach, Hidalgo's economic policy should initially focus on translating the recent economic outcomes into increasing patent generation in the state. Innovation capacity will allow the state to better internalise the new knowledge and technology coming with the FDI investments. It involves making greater efforts to promote the interaction between business and universities to generate R&D. As discussed in the section of human capital, this stresses again the need for a mechanism to enable joint work between universities and private sector (see the section on human capital).

Figure 2.15. Gap on the Hidalgo's enabling factors with benchmark regions
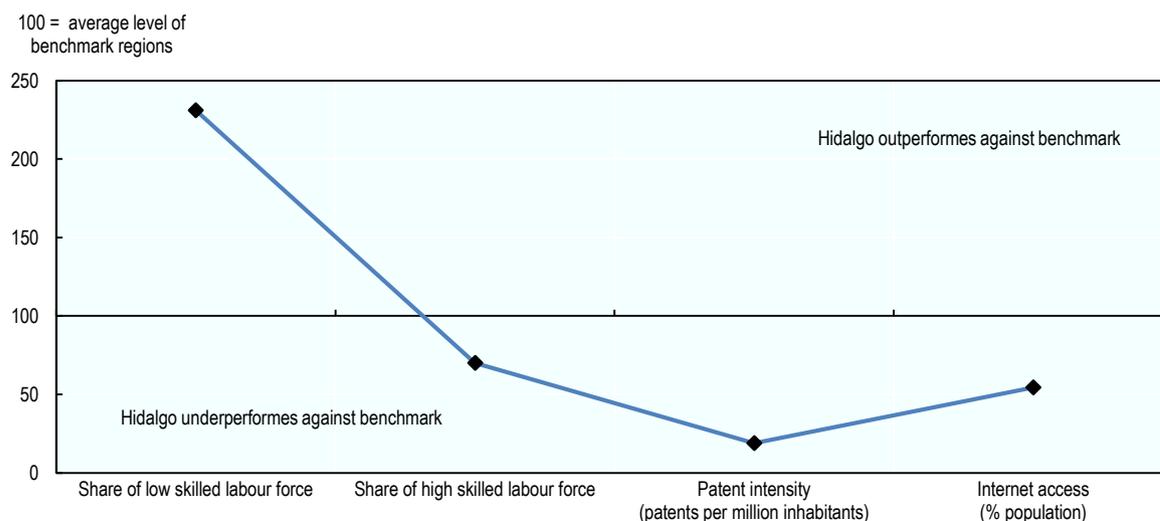
Note: Values above/below 100 indicate the indicator is higher/lower in Hidalgo than in the benchmark group of TL2 regions.
Source: OECD (2018[5]), *Regional Economy*, OECD Regional Statistics (database), http://dx.doi.org/10.1787/a8f15243-en.

Second in the priorities for long-term development should be extending broadband technology across the territory. This is a plan already put in place by the current administration. However, the plan must ensure that people and local infrastructure are prepared to seize the access to digital connectivity.

Therefore, Hidalgo can implement a framework of action to ensure that all segments of the population can benefit from the economic growth generated by more knowledge- and innovation-intensive activities, opportunities to train and upskill, and the exploitation of synergies across sectors. For this framework, the enabling factors can be established as the final goal to attain sustainable regional development grounded in inclusive and environmentally-friendly policies.

The framework needs to be implemented through the right set of policies and government tools so as to effectively attain sustainable inclusive growth. Complementary policies, effective use of governance tools and better co-ordination among different stakeholders and government levels (it will be addressed in depth in Chapter 3 and 4). The framework must also be integrated with a placed-based policy that leverage on the local specificities of the territory such as smart specialisation policy.

A smart specialisation approach for Hidalgo

Smart specialisation is a process of "entrepreneurial discovery" whereby market forces and the private sector discover and produce information about new activities and the government assesses the outcomes and empowers the actors most capable of realising the potential. This can be achieved by further developing currently competitive sectors and investing in the enabling factors, which in turn allow new sectors to flourish.

The smart specialisation strategy has presented a profound structural revolution in the way innovation policies are conceived (Capello and Kroll, 2016[59]). Compared to traditional regional innovation policies, it comprises many innovative aspects (see

Box 2.17). First of all, research and development expenditure is no longer the main barometer of innovation activity. A large variety of innovation types beyond simple product innovation are taken into consideration. Process, market as well as business model innovation are now perceived on par, even favoured to product improvements. Smart specialisation aims that entrepreneurial discovery does not find its roots only in high-tech industry activities, but. target general purpose technologies and networks as well.

Box 2.17. Key aspects of smart specialisation

Smart specialisation is focused on helping entrepreneurs identify their knowledge-based strengths at the regional level and in a more exploratory approach in which public decision makers listen to market signals using a range of assessment tools (e.g. SWOT analysis, surveys) and mechanisms such as public-private partnerships, technology foresight and road mapping. The success of smart specialisation policy measures is closely dependent on the capacity of regional government institutions to act as co-ordinators or facilitators of the intervention.

The OECD has identified the following key messages to promote smart specialisation:

Policies for entrepreneurial discovery. The smart specialisation approach calls for an "entrepreneurial selection" of market opportunities (e.g. to minimise failures and to avoid ill-informed policy decisions). While successful companies will constitute the new specialisation of the country/region (self-discovery), the role for policy is to develop a flexible strategy focusing on measurable intermediate goals, identifying bottlenecks and market failures and ensuring feed-back into policy learning processes. The approach includes incentives to strengthen entrepreneurship and encourage agglomeration.

Promoting general purpose technology platforms and networks. Given the range of applications of general-purpose technologies, technology platforms involving public and private actors but also standard-setting organisations can help increase productivity in existing sectors and help identify sectors in which to concentrate resources.

Diagnostic and indicator-based tools and infrastructure. Smart specialisation requires regions and countries to maintain an infrastructure and indicator base to monitor and evaluate performance and policies.

Strategic governance for smart specialisation. Good governance and the development of local capabilities are key to identifying local strengths; aligning policy actions, building critical mass, developing a vision and implementing a sound strategy.

Openness to other regions. The specialisation strategy of regions should take into account that other regions are also involved in knowledge creating activities and that duplication might lead to lower effectiveness and finally failure. Hence, co-operation with other regions with complementary capabilities and strategies is important.

Source: OECD (2016[14]), *OECD Territorial Reviews: Peru 2016*, http://dx.doi.org/10.1787/9789264262904-en.

The smart specialisation strategy also rejects the common norm of "picking winners" on an industrial basis (Capello and Kroll, 2016[59]). The strategy calls for "entrepreneurial discovery" out of a public-private partnership that adopts a bottom-up approach based on

the self-discovery of entrepreneurial capability. It is thus required an exercise to identify local strengths and relevant policy actions to be aligned with these local specificities.

This strategy advocates a consistent match between investments in knowledge and human capital and the present industrial and technological vocations of territories. It, therefore, favours a policy that fosters growth in a manner that is realistic and adapted to the context concerned and can be explicitly applied in the regional context. As such, a collaborative rather than competitive perception of neighbouring regions is to be adopted, where policy takes into consideration other regions to avoid duplication and to maximise complementarities

A smart specialisation approach to the current economic strategy of Hidalgo

Hidalgo's Economic Development Strategy and its State Development Plan have both characteristics of a smart specialisation strategy. The co-ordination process of the economic strategy conducted by SEDECO, supported municipalities in the definition of smart specialisation strategies, it is a step in the right direction to enable scientific, technological and innovation progress based on the economic vocations and capabilities of each municipality.

However, some aspects of the economic strategy can be improved to effectively link the efforts of establishing new strategic sectors, attracting big foreign firms and linking them with the local assets and needs.

The four main pillars guiding the state's economic strategy (conductive business environment, strengthen existing economic activity, promote new investments and promote entrepreneurship) should be better integrated with a territorial development policy. It involves adapting the economic strategy to the specificities affecting the many distinctive realities in the state and its different communities.

The entrepreneurial discovery process means that Hidalgo should not focus on prioritising the specific four strategic sectors in its economic strategy. In smart specialisation, prioritisation is no longer the exclusive role of the state planner (top-down) but involves an interactive process in which the private sector is discovering and producing information about new activities and the government provides conditions for the search to happen (OECD, 2013[60]).

Therefore, more than targeting the five strategic sectors (energy, agro-industry, electric mobility and pharmaceutical), the administration should target activities to create an enabling environment. These activities can be tied to specific technologies or the technology mix, to specific capabilities, natural assets, etc. In general, what is discovered as future priorities are those activities where innovative projects complement existing productive assets. In this case, the example of Lapland with the development of activities around its mining industry or Andalucia with the classic guitar industry can guide Hidalgo (Box 2.18).

> **Box 2.18. Examples of bottom-up initiatives to foster entrepreneurial discovery**
>
> **Kemi Digipolis: Kemi, Lapland (Finland)**
>
> Lapland is a sparsely populated region in northern Finland with a specialisation in mining. Lapland is a good case of how to build partnerships to promote innovation in this regional context. Kemi Digipolis originated as a science park in 1986 to connect ICT capability at the local university, Kemi-Tornio University of Applied Science, to the significant number of industrial firms in the vicinity. Today the park hosts SMEs in the areas of industrial services, electronics, information technology, environmental technology, corporate and training services and low-temperature and winter technology.
>
> Digipolis has expanded well beyond the traditional role of a university science park. It is now exploring opportunities to connect large local firms engaged in mining, forestry and steel production and their local supply chains in possibly shared environmental concerns with energy efficiency, recycling and generating new by-products. In addition, it is engaged in cluster promotion and development in the Lapland region, in helping local firms penetrate export markets in Scandinavia and in working with municipalities to support business expansion. It also has a conference hosting capacity and provides office management services to firms in the science park.
>
> The Digipolis example identifies the importance of developing links between academic expertise and local firms, but it also shows that in small remote places it is not possible to have as specialised an entity as a conventional science park. Because of the lack of complementary institutions. Digipolis had to broaden the types of things it does to provide a more complete array of support services. Arguably, this may create a more integrated package than might be the case in a large metropolitan area where different entities perform more specialised functions. However, it may also be the case that there are too few resources available to be very good at all in the things Digipolis is currently engaged in. In reality, there is no choice in rural regions but to adopt the Digipolis approach.
>
> *Sources*: OECD (2012[61]), *OECD Territorial Reviews: Skåne, Sweden 2012*, https://doi.org/10.1787/9789264 177741-en; OECD (2017[62]), *OECD Territorial Reviews: Northern Sparsely Populated Areas*, https://doi.org /10.1787/9789264268234-en.
>
> **Alicante (Spain)**
>
> In Alicante a civil society organisation has emerged proposing projects focused on radical specialisation where a discovery is followed by a firm compromise of a critical mass of citizens who become actors then protagonists, followed by authors then co-authors. As an example, one of these projects is focused on the development of a classic guitar culture, where at least ten closely-linked sub-projects have emerged, proposing different business opportunities related to education, tourism, performance, guitar building, museum, recording, research or publishing.
>
> This citizen and business-driven initiative is the consequence of the severe impact of the crisis in Spain, which has brought to a collapse of the traditional business models, highly subsidised in the past: tourism, construction and industrial production.
>
> These citizen- and business-driven initiatives propose a radical change of paradigm, where public investment is located only where a consolidated project is already in place, strictly following a low-cost philosophy. Projects are structured following a "neuronal"

approach, where different private and business stakeholders assume direct responsibility on specific sub-projects and a platform provides full information on the development of the different initiatives. Results are measured upon the degree of cross-fertilisation amongst the projects and the potential and actual market, and job opportunities created, while the role of the public institutions is limited to provide support and co-operate in the creation of the minimum structures needed.

Sources: OECD (2012[61]), *OECD Territorial Reviews: Skåne, Sweden 2012*, https://doi.org/10.1787/9789264 177741-en; OECD (2017[62]), *OECD Territorial Reviews: Northern Sparsely Populated Areas*, https://doi.or g/10.1787/9789264268234-en; OECD (2013[60]), *Innovation-driven Growth in Regions: The Role of Smart Sp ecialisation*, https://www.oecd.org/innovation/inno/smart-specialisation.pdf.

A greater customisation of the economic strategy can reduce the socio-economic disparities in the state. Income, education, health and labour opportunities are much more accessible in Hidalgo's southernmost region, which borders with the state of Mexico. Taking into consideration local specificities means that the implementation of Hidalgo's economic strategy must differentiate between territories. If the economic strategy is applied uniformly and without spatial localisation, the southern areas stand to be the main receptors of the bulk of the economic development efforts behind Hidalgo's reforms. Therefore, a concrete action for Hidalgo would be to conduct a differentiated strategy for northern municipalities based on their local assets (i.e. natural capital and indigenous knowledge).

Applying the smart specialisation also requires bringing the private sector and other key actors of local development on board with the unified economic vision. In this sense, the administration has already rallied a wide variety of social and economic agents as well as stakeholders around a common strategy for the future. Promoting information sharing mechanisms with better communication with the private sector and other stakeholders will help to generate alternative perspectives on the economic strategy as well as consolidating a common vision for growth. Keeping this consensus and information exchange is not necessarily an easy task to accomplish. It often takes years, even decades, to create a bottom-up communication channel to integrate a growth policy strategy (see Box 2.19). The short-term costs and efforts are worth it in the medium to long run to attain a sustainable and inclusive development.

Box 2.19. Promoting bottom-up endogenous growth strategies

The OECD has highlighted the qualities of the LEADER approach as a tool for generating an endogenous development process with the active participation of rural communities. The basic principles driving the LEADER are: i) territorial approach: local development; ii) participatory approach; iii) ascending, bottom-up approach; iv) multi-sector approach; and v) integration through networks and co-operation. After over two decades of experience, many of the originally intended social aims of the initiative are finally beginning to spur in Spain's rural society. The process is truly a long-term venture, but one that has provoked some of the most significant development and change within rural areas of the EU. Despite having required relatively marginal investments with respect to total budget (EAFRD funds – Pillar II – and – Pillar I – funds), LEADER funds have made a significant difference where they were truly oriented to the intended objectives and under the intended principles.

In countries such as Spain, that have made an important use of the LEADER methodology, the true impact of the LEADER initiatives has taken over 15 years to be authentically felt in the communities where it has been implemented. Of course, there has been a multitude of small businesses and community projects that have been assisted throughout these years, and these have contributed to adding competitiveness, diversification, economic growth and employment to their local economies. But the critical impact of the LEADER initiatives in rural communities of Spain is more qualitative in nature and has provoked substantial observable spill-over of LEADER impact outside the initiative's boundaries. These are:

- Creation of a culture of local governance and community self-initiative.

- New participation space.

- Building local pride by giving value to and reintroducing local heritage and customs.

- Good use and multiplier effect of resources.

- Less dependency culture and more self-sufficiency.

- Multitude of experiences and accumulation of best practices.

- Proximity and territorial coverage.

- Spill-over effects.

- Opportunities for young people and women.

- Greater appreciation of rural areas.

- Gradual acceptance of agrarian sector.

Source: OECD (2009[63]), *OECD Rural Policy Reviews: Spain 2009*, https://doi.org/10.1787/9789264060074-en.

The placed-based approach for the strategy of internationalisation

FDI and internationalisation are cornerstone elements of the regional development strategy of Hidalgo. This resonates well with the existing academic literature highlighting both conceptually and empirically the crucial role of global FDI connectivity for regional economic development. However, FDI on its own is not a guarantee of economic development. If an FDI attraction strategy is not matched with the existing capabilities and local assets of a territory, it will not produce a sustainable economic and social outcome.

The state's economic strategy has begun by creating the environment for business. Attracting and retaining investments, by enhancing the climate for small businesses for example, requires that its administration adopts a place-based rather than a sector-based policy approach. A place-based policy approach takes a more holistic view of the interrelations between policy challenges affecting a particular territory: the different aspects that affect the development of a particular territory are considered in a comprehensive way in coherence with an overall strategic vision for the future of the area.

Hidalgo must use this attractiveness as a basis for development. To retain investment, and attract ideas and people will require foresight and appropriate planning supports. Rather than courting FDIs and business investments on a case-by-case basis, making Hidalgo attractive holistically is much more likely to have a lasting impact on promoting economic development activities and improving the living standards of local residents

To optimise the FDI attraction potential of Hidalgo's competitive advantages, the state must make them better known to the FDI market. Hidalgo's existing strengths are little known by investors, especially foreign ones. The state should, therefore, communicate these competitive advantages, but in a manner that is perceived as credible. To do so Hidalgo should:

- Identify first the segments of the FDI market that most values what Hidalgo can potentially offer better than other comparable regions (safety, pro-active government action, environment, connectivity and cost). The state should avoid getting distracted in its FDI attraction efforts towards luring segments of the market that may appear appealing, but whose needs are not well matched by what Hidalgo has best to offer.

- Benefit from giving itself as a stronger trademark. At the moment, Hidalgo is not associated with industry or investment opportunity. The state's investment potential and attractiveness for FDI is unduly receiving little recognition. Hidalgo's competitive advantages for business must be projected to existing and potential investors. Therefore, a new strong and credible trademark based on its core advantages (mentioned above) would better grab the attention of investors.

Additionally, helping local firms to internationalise is as important as attracting FDI. Internationally active SMEs show higher average returns and employment growth levels, as well as greater innovation rates than their non-internationalised counterparts (Lamb, Sandberg and Liesch, 2011[64]). Therefore, a successful regional development strategy should target both passive (FDI inflows) and active internationalisation (Crescenzi, Pietrobelli and Rabellotti, 2014[65]). Domestic firms should be encouraged and supported in their exploration and expansion into a diverse set of foreign markets

Smart specialisation policy approach should also capitalise the potential gains from GVCs integration. To do so, Hidalgo must concentrate on what lies within its existing or predicted future capability frontier. The strategic choices driving the state's positioning within the GVC must be made with a medium to a long-term perspective where spill-overs can be achieved and where local businesses and entrepreneurs will be capable of seizing these opportunities locally. In this sense, a concrete action should be:

- Consolidate the textile industry as a key international player and place it high as a strategic sector for the economy. This sector has a long history in the state and involves a wide number of business and communities. The state encompasses handcrafted production of t-shirts made in the north by indigenous communities to more sophisticated industries that elaborate pieces for external markets. Hidalgo should keep supporting the sector in order to encourage local textile industries to increase productivity and competitiveness through an active participation in the Council of Science, Technology and Innovation of Hidalgo.

Building effective clusters

Industrial clustering is especially apt for territorial economic development as an implementation mechanism of smart specialisation strategies. Nevertheless, clusters are rarely effective when artificially stimulated through policy (OECD, 2010[66]).

Clusters can help generate critical mass and knowledge spill-overs necessary for competitiveness and growth within a determined local or regional territory (OECD, 2010[66]). Agglomeration benefits can be generated when certain industries cluster within the same geographical area. This proximity and critical mass that is built around a single value chain tends to generate and consequently attract complimentary industries and services. It also creates a stock of trained and industry-specific skilled human capital. Knowledge transfers and spill-overs are more common, and benchmarking becomes much more frequent across local competing producers. This often helps install a special dynamism as well as a local business mindset of "co-opetition" within the cluster whose synergies tend to favour the competitiveness of those producers involved.

Policy should be a facilitator for the generation of industrial clusters. While clustering of innovative activities and productive resources is a dominant feature of highly developed and economically successful places, there is no evidence that when clustering is induced by means of public policies it is conducive to measurable economic benefits (Crescenzi, Nathan and Rodríguez-Pose, 2016[67]). The clusters that are being provoked are more likely to end-up becoming agglomeration of firms that compete for the attention and favour of the administration and its institutions. In such a scenario, it is very unlikely that the expected benefits from industrial clustering will be produced. Therefore, to boost productivity and complementarities within the productive chain of certain industries, policy should focus on creating a sound business environment that facilitates the workings and collaboration between firms, the administration and academia (see Box 2.20).

Box 2.20. Cluster policies

Clusters are generally understood to be geographic concentrations of interconnected firms and related actors such as specialised service providers, universities and others. Clusters serve to support the dynamics of market and knowledge exchanges among firms and other actors in the region and in the international value chain networks, serving as nodes in global networks.

According to Crescenzi, Nathan and Rodríguez-Pose (2016[67]) clusters should not be induced by public policy, rather facilitate cluster-type relations in terms of university-industry collaborations or global FDI connectivity.

The purpose of cluster policies is to strengthen a particular regional economy. A cluster policy is an intersection of more than one policy stream given their increasingly shared goals. Policy streams commonly promoting cluster-type policies include regional economic development policy, science and technology and innovation policy, industrial policy and higher education.

Cluster policies should build on the competitive advantages of the region. Fostering cluster formation around a foreign company entails the risk of limiting the positive spill-over effects in terms of building up local competencies and knowledge. One way of enhancing spillover effects from foreign companies is by defining requirements regarding

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minimum levels of local content in operations. This can be done in terms of the use of local labour or a certain fraction of the final product being produced locally.

Beyond policies to address framework conditions in terms of the regional environment, regulation and finance, commonly used instruments in cluster policies also tend to support:

- Engagement of actors: host awareness raising events (conferences); offer financial incentives for firm networking organisations; sponsor firm networking activities: map cluster relationships.

- Collective services and business linkages: brokering services and platforms between suppliers and purchasers; establish technical standards; assistance to inward investors in the cluster; supply chain linkage support; collect and disseminate labour market information; specialised vocational and university training.

- Collaborative R&D/commercialisation: support joint projects among firms, universities and research institutions; technology transfer support services; overcome barriers to public sector incentives in commercialisation.

The Copenhagen Cleantech Cluster is a good example of cluster policies. The cluster is part of a series of initiatives to support innovative cleantech solutions that will help achieve the ambitious goal of becoming independent from coal, oil and gas in 2050. The Copenhagen Cleantech Cluster project was launched in 2009 to ensure smart growth and innovation. The vision of the project was also to develop the Capital Region of Denmark and the Region Zealand into one of the world's leading cleantech clusters by creating networks involving a wide range of participants including knowledge institutions, industry promoters, leading cleantech companies and public authorities. During the project, Copenhagen Cleantech Cluster was established as a private association and in 2014, the Copenhagen Cleantech Cluster merged with the Lean Energy Cluster whereby the national cluster CLEAN was established. Today, CLEAN is Denmark's green cluster with more than 170 members from the entire Danish cleantech sector including companies, regions and research institutions.

Sources: OECD (2010[66]), "Cluster policies", *Innovation Policy Handbook*, http://www.oecd.org/innovation/policyplatform/48137710.pdf; Crescenzi, R., M. Nathan and A. Rodríguez-Pose (2016[67]), "Do inventors talk to strangers? On proximity and collaborative knowledge creation", *Research Policy*, Vol. 45(1), pp. 177-194; European Commission (2016[68]), *A Clean Sweep for Tech Growth in Denmark*, EU Regional and Urban Development, http://ec.europa.eu/regional_policy/en/projects/denmark/a-clean-sweep-for-tech-growth-in-denmark.

The state has had some initiatives around clustering firms, although these have not completely taken off. Pachuca City of Knowledge and Culture (*Pachuca Ciudad del Conocimiento y la Cultura*) seeks to capitalise the academic and scientific structure of the state to collaborate with firms that have value added through R&D. This platform has a textile vocation with collaboration among the National Polytechnic Institute, the Autonomous University of Hidalgo and the national chambers for textile and dress industry (*Canaintex y Canaive*).

In the economic strategy, the administration aims to promote clusters around the five strategic sectors. In the case of electric sustainable mobility, the intention is to promote a cluster around the expertise and spill-over gains from the establishment of the

Chinese company JAC Motors in Ciudad Sahagún and the auto manufacture DINA that is already developing electric buses.

For the strategic sector of renewable energy, the government seeks to foster collaboration among the newly created State Energy Agency (Agencia Estatal de Energía) and renewable energy firms that have invested in Hidalgo, such as Atlas Renewable Energy. The current Law to Promote Hidalgo's Sustainable Energy Development is a step forward in establishing clear rules for a dynamic energy sector in the state by allowing companies to benefit from the opening of the energy market in Mexico. The current energy infrastructure in the state would allow not only the production of renewable energy but its transport and storage it as well.

The economic strategy includes policy objectives that are coherent with establishing the appropriate institutional and business ecosystem for the potential development of industrial clusters (i.e. strengthen current economic activity and improving regulation). Hidalgo's public administration should keep with the role of facilitator rather than the driver of local industrial clustering. Clustering is something that innovative activities tend to do, but the reverse does not hold true. Hidalgo should thus also be aware that clustering economic activities is not the only way to stimulate innovation. Therefore, it might be worth further exploring actions and tools (not necessarily within the strategic sectors) to facilitate cluster-type relations, in terms of university-industry collaborations (Crescenzi, Filippetti and Iammarino, 2017[69])) or global FDI connectivity (Crescenzi and Iammarino, 2017[70]) for example. The example of the transition from a cluster policy to smart specialisation in Laphi, Finland, can guide Hidalgo in identifying the strategic policies that complement local characteristics (Box 2.21).

Hidalgo can also promote the presence of knowledge-intensive business service firms (KIBS) within its industrial parks. It has been found to facilitate the workings of the industrial districts and helps generate the benefits of clustering. Together with the right co-opetition mindset and the presence of an informal system of knowledge diffusion, proximity with KIBS is an essential part of effective clusters; and especially knowledge-based industry clusters that are dependent on innovation (Horváth and Rabetino, 2018[71]). Although the impact of KIBS does not necessarily depend on volume, but rather the bonds they hold with local industry, their presence in Hidalgo is marginal. Excluding financial services from the tally, business services represent less than 2% of the state's GDP in 2015 (INEGI). Hidalgo is in dire need of a greater local supply of business services, especially knowledge-intensive services, if it is to generate any of the synergies and knowledge benefits associated with the clustering of industries.

The policy to facilitate clustering can further focus on the northern part of the state. While the state is developing cluster in these regions, special attention should be given to the right integration with local business and infrastructure in order to best benefit local communities. Many rural areas in the north do not have a dominant industry, and if they do, local firms do not sufficiently complement each other by covering enough of any industry's value-chain functions. Supporting the entrepreneurial activity in these areas and creating complementarities between established SMEs and new investments (i.e. agro-industry) is a way to build the path for clustering spark in the area.

Box 2.21. From cluster policy to smart specialisation: The case of Lathi in Finland

The synchronisation process of Finnish national and regional innovation strategies had the overall aim of increasing the competitiveness of the Finnish economy. In the Päijät-Häme (Lahti) region, the concern was to find the cross-cutting competencies and industries that could create the most competitive value for a low-level R&D activity area such as Lahti.

For the past two decades, Päijät-Häme has been seen as a declining industrial region relying on a tight cluster strategy, without a university of its own. These characteristics have been reflected in weaker competitiveness and a lower level of education compared to the national level.

In the Päijät-Häme case, the combination of inefficiency caused by the isolating nature of the cluster strategy and low R&D input eventually led to a new action model in the region that might be described as a form of smart specialisation. It comprises an understanding of the wide range of innovation as well as concentration on practice-based (not scientific-based) innovation and the spearheads of expertise serving all industries and clusters, namely environment, design and practice-based innovation. This model of thought enabled the collaboration of all the strategies, plans and bodies in the region.

Since the industry structure was skewed to low-technology industries, the potential has resided in the ability to renew based on the ability to utilise cross-disciplinary competencies and identification of changes in lead markets. Through a series of workshops and with the participation of representatives from regional authorities, universities, polytechnics and private companies, the region defined its regional strategy profile. The final result outlined competitive industries, core cross-cutting competencies and strategic lead-market themes for the development of its innovation ecosystem and industrial outlook in the future. Based on cross-cutting competencies, lead market themes, supporting industries and demanding test markets, the process led to the definition of three thematic top expertise areas: environment, design and practice-based innovation.

To build upon these areas, Päijät-Häme generated a new, internationally high-quality network of research and development and innovation, a "meta-platform" that combined the three expertise areas with regionally strong clusters and industries in a unique way. It helped to identify innovative business potential in border-crossing expertise areas and industries. The framework of the platform is presented in Figure 2.16.

Lessons earned and conclusions for policy in the region were:

- Abandonment of the strategic cluster emphasis: The first phase of smart specialisation consisted in the abandonment of the strategic cluster emphasis.

- Experimentation: The strategic combination of the new practice-based innovation philosophy with the top three areas of expertise led to a novel innovation environment, that could perhaps be renamed as a preliminary phase of smart specialisation.

- The role of innovation in each region: The Lahti example indicates that a region poor in research and development resources may also show a high proportion of innovativeness. The number of innovations in Finnish regions related to their added value by 2007, showing Päijät-Häme as the most relatively innovative regions in Finland despite very low research input.

Figure 2.16. The regional platform of innovation in Lathi

Clean-tech/Environment
("Key organisational player": Lathi Science and Business Park)

Eco-design

The meta-platform of innovation in Lathi

Sustainable innovation

Design
("Key organisational player": Institute of Design, Lathi University of Applied Science)

User-driven R&D

Practice-based innovation activities
("Key organisational player": LUT - Lathi School of Innovation)

Source: Adapted from OECD (2013[60]), *Innovation-driven Growth in Regions: The Role of Smart Specialisation*, https://www.oecd.org/innovation/inno/smart-specialisation.pdf.

Making the most of special economic zones

Special economic zones (SEZ) are an increasingly popular mechanism adopted in a growing number of countries to attempt to stimulate the conditions required for effective industrial clustering. Many OECD counties, including Mexico, include SEZs as part of their economic development policy. The objectives of the SEZ are mainly to: i) spur economic development; ii) facilitate the local transfer of technology; and iii) stimulate the benefits coming from increased local economic activity. In practice, SEZs have been promoted with the intention of boosting exports, diversifying the economy and generating direct and indirect jobs. Developed economies have also resorted to SEZs as a way to foster economic development in their lagging regions.

The way that SEZs operate relies heavily on regulatory and public-private facilitation of economic activity. The main tools used within an SEZ are a regulatory incentive, infrastructural investments and the development of local support services that will all contribute to stimulating economic activity and investment.

The Mexican SEZ

Mexico has adopted the SEZ methodology in order to stimulate the economic and industrial development of its economically lagging regions. The goal behind the implementation of SEZs in Mexico is to support development in less developed states and

give the potential to attract investment, improve infrastructure and reduce regulatory barriers in these regions. The motivation behind the introduction of SEZs by the Mexican government came out of the growing disparities observed among states and sectors in Mexico. The implementation of the SEZ in Mexico is, therefore, to contribute towards the elimination of the poverty gap from the bottom.

The development of these new industrial clusters is meant to build upon existing industrial base, rather than create districts from scratch. The SEZs are also meant to be the product of effective multi-level co-ordinated efforts between the various governance structures. As such, the administrations have given themselves the Mexican SEZ Law that defines and delimits the conditions by which an area can be designated an SEZ and depicts the functioning and monitoring that is to be implemented within each Mexican SEZ. The Mexican SEZ Law considers an influence area, formed by the SEZ's adjacent communities, which requires efforts in training, transfer of technology and territorial structuring. Through this innovative case, the benefits linked to a SEZ are expected to be magnified, creating greater attractiveness for the area and additional demand for goods and services produced in the area.

The basic criteria that an area must fulfil in order to be eligible to apply for the SEZ status are the following:

- Be among the ten Mexican states with the highest incidence of poverty and extreme poverty.

- Have a strategic geographic location that facilitates the integration between different modes of transport and enhances connectivity with other national and international markets.

- Foresee the installation of productive sectors that enhance their comparative advantages and their present or potential productive vocation.

- Have a population of between 50 000 and 500 000 inhabitants.

The incentives offered to firms that choose to locate their operations within a SEZ are of both a fiscal and non-fiscal nature as well as the opportunity to access special SEZ financing programmes. The fiscal incentives are both offered by the federal and state authorities.

In the case of the federal fiscal incentives, they include:

- A 100% income tax discount during the first 10 years and a 50% discount during the following 5 years.

- An additional 25% deduction for training expenses related to technical or scientific knowledge linked with the firm's SEZ-related activity.

- A fiscal credit against their income tax in order to cover part of their social security fees.

- Significant value added tax (VAT) discounts, including 0% VAT on all international trade to or from a SEZ.

- SEZ firms also benefit from a special customs regime.

Local fiscal incentives mostly take the form of payroll tax, property tax and real estate transaction tax exemptions or discounts, while the non-fiscal incentives offered to firms established within SEZ are mostly linked to support or assistance programmes for

entrepreneurs, initial investments, worker support, industry-based support, innovation, training, competitiveness enhancement, and financing programmes. The preferred SEZ funding programmes offer: i) competitive interest rates; ii) extended terms; iii) flexible payment schemes; and iv) lines of credit for local purchases.

At the time of writing this report a total of three SEZ had been officially declared (Lazaro Cardenas, Coatzacoalcos, Puerto Chiapas), two have been approved and are awaiting declaration (Salina Cruz, Progreso), while two more are in the process of being approved (Campeche, Tabasco). A total of nine areas from nine different states have signed letters of intent and have passed state SEZ laws, which represents a key initial step to the establishment of a SEZ. Hidalgo is one of the states that has passed a SEZ law and is currently undergoing the pre-approval appraisal.

The Hidalgo state's SEZ

The aim of the SEZ programme in Hidalgo is to install a special economic zone that contributes to close the socio-economic gap of the territory, through the arrival of investments and the establishment of specialised industries of high added value, that position Hidalgo within the international markets.

Horizontal, cross-secretariat, discussions and accords about the SEZ led to consensus and general support for the SEZ in Hidalgo. The same is true amongst the different presidents of the municipal governments falling within the area of influence of the SEZ and their secretariats of public works and zoning. The state and municipal secretariats in charge of public education and social development were also involved in the planning and development of Hidalgo's SEZ.

The flagship industries that have been chosen for Hidalgo's SEZ are founded on existing industrial bases already in place in the area: sustainable mobility, renewable energy and pharmaceuticals. From these main industries, several related complementary value-chain industries have been identified as a priority for Hidalgo's SEZ (Figure 2.17). Out of these sectors, specific vocational skills have been identified as essential for the development of the industrial dynamics required for the effective internal function of the SEZ. These skills are mostly associated with the following fields: plastic, machinery and equipment, logistics, electric, automotive and auto-parts industries.

There is a great opportunity to work with the higher learning institutions in order to adjust their offer to those skills that are expected to be most in demand from the firms active within the SEZ and throughout the SEZ's area of influence. For instance, training programmes in the mechanical industry, automotive mechanics and metalworking and electrical-electronic should be enhanced. In particular, the high school curriculum lacks mechatronics and logistics fields (Secretary of Economic Development of Hidalgo, 2016[7]).

Figure 2.17. Complementary areas of the flagship sectors for Hidalgo's SEZ
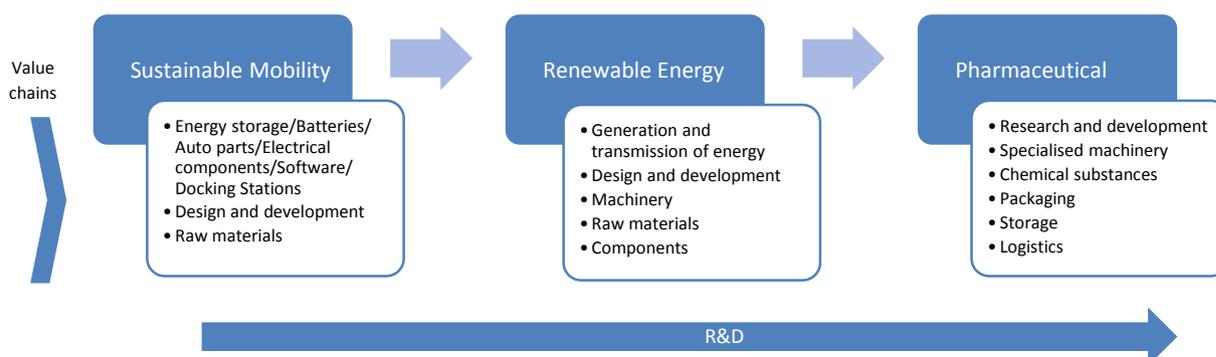
Source: Secretary of Economic Development of Hidalgo (2018[15]), *Presentation of Economic Development*.

The final financial model for the SEZ project in Hidalgo proposes an economic investment split into 2 items: private investment that represents MXN 4 553.4 million and public investment that includes MXN 5 767 million, for a total of MXN 10 300.4 million. The item with the greatest amount of investment is an investment in infrastructure followed by investment in construction. These investments are judged necessary to give the SEZ in Hidalgo the required infrastructure that will guarantee its operational effectiveness and good functioning.

Apart from all the mentioned federal and state incentives offered to firms that establish their operations within the SEZ, the SEZ must be attractive in itself. The state should focus on improving amenities, social capital and operational effectiveness. There will soon be over half a dozen different SEZs throughout Mexico, all offering similar incentive packages, together with non-SEZ industrial districts offering their own particular differentiated comparative advantages. The SEZ in Hidalgo must surpass all of these in effective and quality service provision so as to make sure that those firms that are the best match for Hidalgo's specificities and smart specialisation will naturally be drawn to locate and grow in the region.

Seizing the opportunities from the SEZ

To achieve this, infrastructural and construction investments are of course needed, but the managerial and administrative talent of the SEZ in Hidalgo is probably even more important. Community management, the promotion of social capital formation and the development of a strong sense of belonging amongst the entrepreneurs, firms and agents involved in the SEZ Hidalgo is also essential.

Despite having very detailed pre-feasibility and impact studies, the mechanisms to achieve and monitor the outcomes should be further clarified. This is especially evident taking into consideration the highly qualitative nature of the overarching objective that is said to drive the SEZ project in Hidalgo: contribute to close the socio-economic gap of the territory. Specific goals will help make the most of these projects.

Similarly, more can be said in regard to the social impact study concerning the probable displacement and agglomeration effects that will be generated in the event that the SEZ does achieve its projected economic success. How these displacements are managed in order to best contribute to closing Hidalgo's socio-economic gap can be further explained. With clear and concrete social objective and consequent measures for the SEZ

project, Hidalgo will maximise the positive impact for the population living in the area of influence of the SEZ and beyond.

From a co-ordination point of view, Hidalgo should carefully observe and learn from the experience of the other SEZs in Mexico that have preceded Hidalgo. Benchmarking their successes and avoiding the repetition of possible errors committed by other SEZs can save Hidalgo many concerns as they develop their own project. In this aspect, not having been part of the initial round of Mexican SEZs may be to its advantage if Hidalgo can capture the learning economies generated by their homonyms from other states.

Greater co-ordination and exchange of experience across the different SEZs at a national level could help to stimulate the sharing of experiences and learning. Such collaboration would be to the benefit of all SEZs involved, especially the new ones that are still in their planning stages, such as Hidalgo. It may be up to the federal administration to establish such a co-ordination body. In that sense, all the past and current efforts with regards to SEZ should be well balanced with a cost-benefit analysis when it comes to the final decision about the implementation of the project.

Together with collaboration structures, Hidalgo should implement policy learning devices so as to implement an efficient knowledge management system for the SEZ. Such instruments should document and create an SEZ institutional memory. This will help improve its policies and their impact and will add to the management control systems of the SEZ. Greater knowledge management devices can also contribute to more effective management, efficient operations as well as an innovative and strategic development of the SEZ.

The critical points for the establishment of a well-functioning SEZ are similar to what was already discussed in the previous section on industrial clustering. Contrary to the traditional sources of location advantages (i.e. agglomeration economies, market access and labour market conditions), SEZs rely more on innovation and socio-institutional drivers of investments and economic activity. In this way, the potential agglomeration economies result from the value chain configuration and complementary functions rather than from any specific sector. These new functional agglomerations are emerging across OECD countries.

Another critical point for the success of the SEZ and the development of functional agglomerations is the existence of adequate regional socio-economic and institutional conditions. Only with the appropriate endowments and favourable ecosystem will investment and venturing initiatives be attracted and take hold within the most sophisticated knowledge-intensive stages of the industrial value chain.

Finally, physical infrastructure, including connectivity, is also critical for the prosperity of the SEZ. Adequate infrastructure is not only a point of attractiveness, but it is also a source of greater potential outcome multiplier out of the local resources and capital injections made. The appropriate infrastructure can act as an enabler of development, knowledge transfers and socio-economic impact within a SEZ. The key here is having appropriate infrastructural assets that are well-adapted to the needs of the SEZ and that favour the development of a well-functioning local innovation system. This is more important than purely technological assets (Ascani, Crescenzi and Iammarino, 2016[71]).

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Chapter 3. Towards a more inclusive Hidalgo: An integrated approach to territorial development

This chapter examines the territorial development dimension of the State of Hidalgo and suggests how to design urban and rural policies to improve regional development outcomes. It starts with an overview of the well-being conditions in the state. Then, it analyses urban and regional development through metropolitan governance, mobility and spatial planning policies. The third section analyses rural policies, focusing on the agricultural sector and the non-farming opportunities such as tourism. Finally, it reviews the state of the natural capital in the State of Hidalgo.

Key findings and recommendations

Key findings

1. Well-being in Hidalgo ranks below national and international levels when it comes to work-life balance, education and access to services, though security is an asset in the state.

2. Road infrastructure and accessibility are poor and highly uneven between south and north. While the south is well connected to the rail national system, national ports and Mexico City, the northern municipalities do not have direct access to external markets.

3. The state is experiencing a rapid urbanisation process concentrated in few municipalities in the south, although the urban population remains relatively low. Between 1990 and 2015, the urban population growth in Hidalgo (2.7% annual average) was above the growth rate of Mexico (2%) and Latin-American countries (1.9%). Nevertheless, the current level of urbanisation in the state (57%) remains far below the Mexican level (79%). Hidalgo's proximity to Mexico City along with its topographic characteristics has led the people's concentration around the 3 metropolitan areas of the state: Pachuca, Tula and Tulancingo. In 2015, the metropolitan areas housed 65% of the urban population in the state and, between 2000 and 2014, their population grew almost twice as fast as the rest of the state.

4. The urbanisation process has generated a rapid expansion of urban land in metropolitan areas but has followed a low, dense urban growth with high sprawl. From 2000 to 2015, Pachuca ranked in the top 5 states with the highest population growth (2.9% annual average) and as the first with the largest urban land growth (43%) among Mexican and OECD metropolitan areas. In Pachuca, just 43% of inhabitants live in the urban core, far below the average of Mexican metropolitan areas (84%) and OECD metropolitan areas (70%). In fact, since 2000, the population in the commuting area of the Pachuca Metropolitan Area has grown faster (3.8% annual average) than in the core (2.6%).

5. The Pachuca Metropolitan Area is the powerhouse of the state and is experiencing rapid economic growth, albeit still recording relatively low levels of job creation, labour productivity and income. It concentrates the largest share of business (26%) and employment (24%) in the state. In the 2000-14 period, Pachuca experienced the third fastest economic growth (4.9% annual average) among OECD metropolitan areas below 1 million inhabitants. However, it still faces challenges to improve labour productivity (the 7th lowest amongst OECD comparison) and tackle unemployment growth (the 2nd highest unemployment growth amongst OECD).

6. There is a lack of urban and environmental law enforcement at different levels of government. The law framework in Hidalgo acknowledges the importance of developing and updating planning instruments for urban and environmental governance. Nevertheless, big challenges persist:

- The State of Hidalgo still relies on an outdated urban plan from 1979.

- At the local level there, just 7 out of 84 municipalities have conducted an urban development plan.

- 26 municipalities are not covered by an ecological management plan.

- Just one-fifth of municipalities have updated their cadastres, while the rest have, on average, documents of more than 15 years old.

7. Co-ordination and involvement of key actors is a challenge for urban governance. Urban projects are in many cases conducted without following environmental guidelines. For instance, in Pachuca, between 2001 and 2016, 30 out of the 69 housing projects approved by the local government did not have an environmental impact assessment. Likewise, the Secretary of Transport and Mobility (SEMOT) is still weak, lacks formal mechanisms to get involved in urban plans and the technical and skilled staff for efficient operation.

8. The phenomenon of poverty in the state is concentrated in rural areas with an important ethnic and ageing component. Despite its rapid urbanisation process, a large share of the population in Hidalgo still lives in rural areas (46%) and most of the territory is classified as rural (97% of localities are rural areas). Rural areas are characterised by a high share of indigenous people (above 80% of the indigenous population in the state) and an ageing population (three-quarters of the farmers in the state are more than 60 years old). Hidalgo ranks as the seventh state with the highest poverty rate in the country, with the highest rates located in rural municipalities. The extreme poverty in non-metropolitan areas (13%) is 10 times higher than in metropolitan areas (3%). The vast majority of the areas where indigenous people live lack connection to the main water supply (88% of the areas) and sewage (90%).

9. Rural policy in Hidalgo is mainly focused on the agricultural sector, following a paternalistic approach and with a lack of consideration for synergies with other sectors. The support provided to producers and farmers is unidirectional and based on subsidies and in-kind contributions. Although some programmes focus on involving producers in the post-production process, the general approach of the State of Hidalgo remains largely based on assistantship. It lacks a territorial approach with a long-term strategy for job creation and business development in rural areas.

10. The tourism sector has a strong potential to empower communities and help preserve natural resources in Hidalgo. However, the tourism policy lacks integration with other sectors, co-ordination among municipalities, professionalisation and quality data. Although Hidalgo aims to enter into new niche tourism markets (i.e. ecotourism, medical tourism), it does not have a clear branding and needs a strategy of complementarities with local assets.

11. The State of Hidalgo has been gifted with a diverse natural endowment, yet the natural resources are being overexploited and polluted. Hidalgo is among the top ten states with the lowest index in environmental management and conservation in Mexico and ranks among the five states with the lowest allocation of public resources to environmental issues. Wastewater treatment, protected areas, solid waste management and forestry conservation are the main challenges.

Introduction

Attaining inclusive growth in Hidalgo is a challenge since the state registers important levels of inequality and poverty with a clear north-south divide. The concentration of population and economic growth in the southern part of the state has generated an uneven development process with respect to the rural areas in the centre-north mountainous region. Rural areas concentrate higher poverty and labour informality rates with an important ethnic and ageing component as well as a lower access to public services and markets, which hampers the competitiveness of the state as a whole.

Urban areas have expanded rapidly in the south, yet with a lack of urban planning and policy co-ordination. In order to reap the benefits of agglomerations, improve the well-being of citizens and attain sustainable growth, a better urban governance is needed. Ensuring a sustainable development path for Hidalgo requires establishing the necessary conditions to unlock productivity opportunities while taking into account the environmental dimension. In this respect, well-defined rural and urban policies can help improve the situation of local communities by enhancing connectivity to markets, improving the delivery of public services and generating productivity growth in farming and non-farming activities. Given the rapid urbanisation trend in Hidalgo, these policies will need to be synchronised and implemented with an integrated vision of rural and urban areas.

This chapter starts with an overview of the well-being conditions in the state. Then, it examines urban and regional development through metropolitan governance, mobility and spatial planning policies. The third section analyses rural policies focusing on the agricultural sector and non-farming opportunities. Finally, it reviews the state of the natural capital in Hidalgo.

Hidalgo faces various challenges on quality of life

Hidalgo is below international and national standards in well-being. According to the 11 dimensions measured in the 2016 *OECD Regional Well-Being Framework*, Hidalgo ranks below all dimensions of well-being except one (jobs) when compared to OECD regions. Compared to Mexican states, Hidalgo ranks below life satisfaction, housing, access to services and income dimensions (Figure 3.1).

The largest gaps in Hidalgo appear in:

- Education: It is essential to promote innovation and economic growth in the territory. In 2016, the share of labour force with at least secondary education in the state (39%) was the 8th lowest across Mexican states (46% average) and far below the average in OECD regions (74%).

- Housing: Housing costs often represent the largest expenditure on household income. Furthermore, the increase in such housing costs might push less wealthy households out of certain neighbourhoods, especially in attractive areas. When measuring housing by the average number of rooms per person, Hidalgo scores (0.9) below the average of both OECD regions (1.8) and Mexican states (1.0). Particularly, in the case of Pachuca, the imbalance between demand and supply and the migration inflow have boosted housing and rental prices, pushing out low-income dwellers far from the centre (Government of Hidalgo, 2017[1]).

- Access to services, which depend on the state of physical and information and communications technology (ICT) infrastructure, remain scarce and deficient in Hidalgo. People living in the northern municipalities of the state experience a significant gap in access to essential services including schools and hospitals. For instance, people living in several northern municipalities have only access to 1 school within a 60-minute commute, while people in Pachuca or other southern municipalities can reach more than 100 schools in the same travel time (see Chapter 1). Access to the Internet is unavailable for most of the rural population in the north of the state. Hidalgo is the 8th state with the lowest share of households connected to broadband (25%), below the average of Mexican states (34%).

- When it comes to road infrastructure, the road network in the state is composed mainly of unpaved rural roads with the modern roads located in the south of the state. Rural roads account for more than half of the network (51%), which is above the average of the country (43%). Furthermore, some municipalities, mainly outside metropolitan areas, do not have paved highways (19 out of 84 municipalities) and many lack direct connections to tertiary roads (INEGI, 2016[2]).

Figure 3.1. Comparison of well-being dimensions, 2016
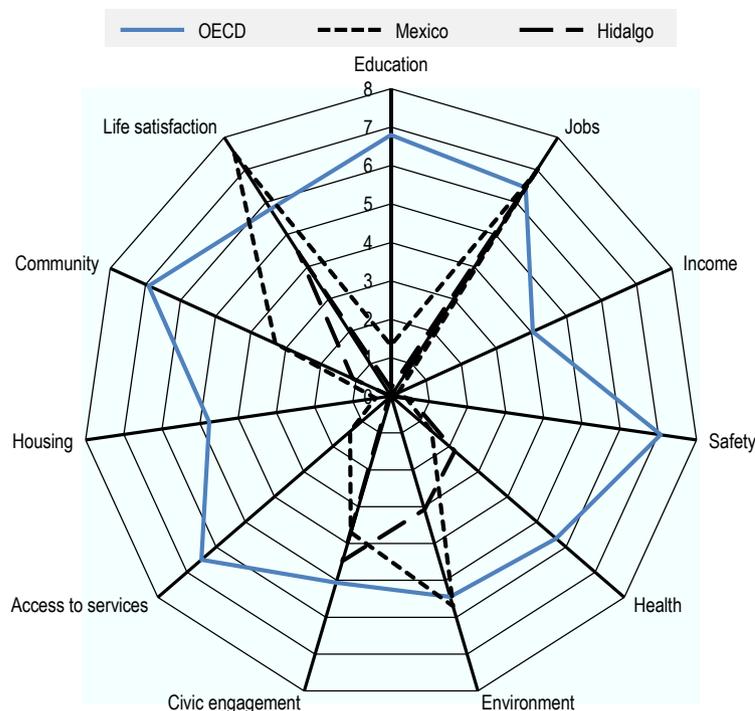
Note: Each well-being dimension is measured by one or the average of two indicators. Indicators are normalised to range between 10 (best) and 0 according to the following formula: (indicator value - minimum value across all OECD regions)/(maximum value across all OECD regions - minimum value across all OECD regions) multiplied by 10. In the cases where high values of an indicator mean worse well-being (for example unemployment), the indicator is normalised with the same formula subtracted by 10.
Source: OECD (2016[3]), *Regional Well-Being (database)*, http://dx.doi.org/10.1787/region-data-en.

Despite the former challenges, Hidalgo ranks high in security in comparison to Mexican states. Personal and property security are important factors in creating a sound business environment in a region. Insecurity tends to reduce trust and social cohesion, reducing incentives to make long-term investments, which are important elements of any development strategy. Hidalgo's homicide rate in 2015 was the 3rd lowest in the country (8 homicides per 1 000 people).

Despite its proximity with Mexico City, Hidalgo benefits from a better environmental (14.8 µg/m³), measured by the level of air pollution (PM2.5) experienced by the population, than other states in the Hidalgo in the centre of the country (16 µg/m³, on average)[1]. It underlines the Hidalgo's comparative advantage with respect to its neighbouring states.

Other dimensions where Hidalgo performs relatively better than the average of Mexican states is health and jobs. However, these dimensions are mainly built on variables and focus on quantity rather than quality, which might lead to misleading conclusions for the state. The jobs dimension, based on the average of unemployment and employment rate, includes informal jobs for the case of Hidalgo, which calls for caution when comparing the quality of jobs. In the case of health, the dimension measures life expectancy and mortality rate. Although the state ranks well in this dimension, as seen in this chapter, quality and effective access to healthcare vary greatly throughout the territory, with rural municipalities facing numerous challenges to access services.

Urban development

The importance of cities and their corresponding metropolitan areas to the regions and national economies makes them key players in a territorial development agenda. Urban areas have become the focus of a wide range of public interventions in the face of increasing globalisation and competition for investment. Generally, the concentration of firms and people in specific areas yield important economic advantages such as economies of scale, better matching and functioning labour markets, spill-over effects and more technological progress. However, city size come with urban problems such as congestion, urban sprawl, higher land prices, larger environmental cost (pollution) and higher inequalities (OECD, 2015[4]). While benefits from urbanisation are mainly driven by market forces, costs must be mitigated by public policy.

In most OECD countries, the large majority of the population is already living in cities. Metropolitan areas (defined as urban agglomerations with more than 500 000 inhabitants) in OECD counties account for roughly half of the population and more than half of the gross domestic product (GDP). They also tend to have higher GDP per capita than their respective national averages, higher labour productivity and faster growth rates. Overall, roughly two-thirds of the OECD population lives in urban agglomerations with more than 50 000 inhabitants.

Hidalgo is experiencing a rapid expansion of the metropolitan areas, but without proper planning

Urban population in Hidalgo remains relatively small. Hidalgo's level of urbanisation (57%) is still far below the Mexican level (80%) and the average of Latin-American countries (81%). Furthermore, according to the OECD classification, Hidalgo has the 8th lowest share of the population living in predominantly urban areas (14%) across Mexican states (46%) (see Chapter 1). In fact, the number of Hidalgo's localities

classified as urban represents just 3% (out of the 4 714 localities in the state), while rural localities remain the majority (97%).[2]

Nevertheless, Hidalgo is undergoing a rapid urbanisation process. Despite its late urbanisation dynamic with respect to the rest of the country (Pérez, 2018[5]), the state's urban growth is now catching up (Figure 3.2). Between 1990 and 2015, Hidalgo recorded an average urban population growth of 2.7%, which is greater than the urban growth rate of both Mexico (2%) and Latin American countries (1.9%).

Figure 3.2.Urbanisation rate and urban population growth
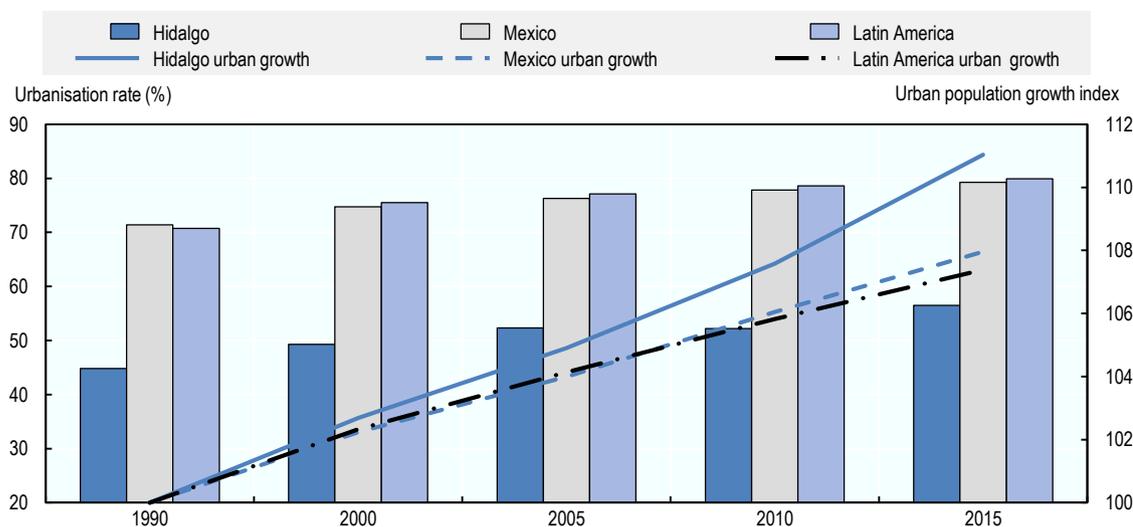
Note: The urban population growth index (100=1980) is calculated with the average annual growth rate.
Sources: United Nations (2018[6]), *World Urbanization Prospects: The 2018 Revision*, https://esa.un.org/unpd/wup (accessed July 2018); (INEGI, 2016[7])

The urbanisation in Hidalgo has been characterised by the rapid population growth in the south of the state. Historically, Hidalgo's proximity with Mexico City along with its topographic characteristics (a mountainous northern area and a large valley in the south), have led people to concentrate in a few municipalities located in the south-centre of the state, mainly Pachuca de Soto, Mineral de la Reforma, Tizayuca, Atitalaquia and Tulancingo. Between 1970 and 2000, the number of urban localities on the aforementioned southern municipalities increased by a factor of ten, much higher than in other parts of the state (Vargas-Gonzalez, 2011[8]).

Overall, the population dynamic has promoted the formation of urban agglomeration mainly around three urban poles in the south: Pachuca de Soto, Tulancingo and Tula, which are the centre of the three metropolitan areas in the state (namely, Pachuca, Tulancingo and Tula), according to Mexico's classification (Box 3.1). In 2015, these 3 metropolitan areas were home of 65% of the urban population in the state, which represents more than one-third of the state's population (37%). Pachuca Metropolitan Area on its own is the largest urban area, accounting for 20% of Hidalgo's population, more than twice the share of Tulancingo (9%) and Tula (8%).

Box 3.1. Definition of metropolitan areas

Two definitions of Mexican "cities" will be used throughout this report: metropolitan areas (*zonas metropolitanas*) as defined by Mexico and OECD functional urban areas (FUA). The latter will be used mainly when it comes to international comparisons, while the Mexican definition when it refers to an analysis inside the country. Both definitions have in common that urban agglomerations are not limited to the administrative boundaries of a city and thus allow a consistent analysis of urban dynamics, growth patterns and economic interconnections with surrounding areas over time.

Mexico's definition of metropolitan urban areas

For Mexico, the Ministry of Social Development (SEDESOL), the National Population Council (CONAPO) and the National Institute of Statistics and Geography (INEGI) determine the extent of metropolitan zones (*zonas metropolitanas*). Their definition considers municipalities with an urban centre of at least 1 million inhabitants or urban centres of at least 50 000 inhabitants that (spatially or functionally) link at least 2 municipalities. These urban centres are combined with the surrounding, less densely populated, municipalities based on two aspects: first, if they are functionally linked (measured by accessibility) and exhibit a functional urban industrial structure (non-agricultural employment share); and second, if municipalities are considered in sub-national or national metropolitan planning.

Table 3.1. Hidalgo's metropolitan areas and population share, 2015

Pachuca Metropolitan Area	Population in metropolitan area (%)	Tulancingo Metropolitan Area	Population in metropolitan area (%)	Tula Metropolitan Area	Population in metropolitan area (%)
Pachuca de Soto	46.2	Tulancingo de Bravo	63.3	Tula de Allende	50.5
Mineral de la Reforma	30.8	Cuautepec de Hinojosa	22.9	Atotonilco de Tula	15.4
Zempoala	8.3	Santiago Tulantepec	13.8	Atitalaquia	12.9
San Agustín Tlaxiaca	6.1			Tlaxcoapan	12.8
Zapotlán de Juárez	3.3			Tlahuelilpan	8.3
Epazoyucan	2.7				
Mineral del Monte	2.6				
Total (number of people)	**570 405**		**261 888**		**220 087**
Share in Hidalgo (%)	**19.8**		**9.1**		**7.6**

Source: Consejo Nacional de Población (2018[9]), *Datos de Proyecciones*, http://www.conapo.gob.mx/es/CONAPO/Proyecciones_Datos (accessed 15 July 2018).

The OECD-EU definition of functional urban areas

The OECD defines metropolitan areas as functional urban areas (FUAs) with at least 500 000 inhabitants. According to the definition used by the OECD (see (OECD, 2012[10]) for details), a functional urban area consists of an urban centre/city and its commuting zone. An urban centre is constituted by 1 or more municipalities that have more than 50% of their population living in high-density clusters. These urban centres are defined as areas with contiguous high-density grid cells with a minimum population of 50 000 (100 000 for Japan and Korea). The high-density threshold is at least 1 500 inhabitants/km² (1 000 for Canada and the United States). The commuting zone consists of surrounding areas where at least 15% of the employed residents commute into the urban centre.

The methodology makes it possible to compare FUAs of similar size across countries, proposing four types of FUAs according to population size:

- Small urban areas, with a population between 50 000 and 200 000.

- Medium-size urban areas, with a population between 200 000 and 500 000.

- Metropolitan areas, with a population between 500 000 and 1.5 million.

- Large metropolitan areas, with a population of 1.5 million or more.

The definition is applied to 30 OECD countries, and it identifies 1 197 FUAs of different sizes. For Hidalgo, OECD methodology identifies Pachuca as the only metropolitan area, while Tulancingo and Tula are medium-size urban areas.

Sources: Adapted from OECD (2015[11]), *OECD Territorial Reviews: Valle de México, Mexico*, http://dx.doi.org/10.1787/9789264245174-en; SEDESOL-CONAPO-INEGI (2015[12]), *Delimitation of the Metropolitan Areas of Mexico*, www.conapo.gob.mx/es/CONAPO/Zonas_metropolitanas_2010 (accessed 15 July 2018); OECD (2012[10]), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, http://dx.doi.org/10.1787/9789264174108-en.

Hidalgo's metropolitan areas are driving population growth

The municipalities within metropolitan areas are experiencing the fastest population growth in the state. From 2000 to 2015, the population in the 3 metropolitan areas grew almost twice as fast as the rest of the state (2.4% vs. 1.3% annual average) (Figure 3.3). In fact, Mineral de la Reforma (in Pachuca) is the municipality that recorded the highest population growth in the state during the last 25 years (9.7% annual average), 8 times higher than the rest of the state's municipalities. Since the future patterns of urban population in Mexico are set to be concentrated towards the centre and north of the country (Fondo Metropolitano del Valle de México, 2011[13]), the urbanisation trend in the south of Hidalgo is set to keep growing in the coming years (Government of Hidalgo, 2017[1]).

Some municipalities around the metropolitan areas have also experienced rapid urban growth (Figure 3.5). In recent years, population across OECD metropolitan areas has also grown rapidly in areas outside the central district and with lower densities (Veneri, 2015[14]). This is the case of municipalities around the metropolitan areas of Tula (Tezenotepec de Aldana and Tetepanco in the north) and Pachuca (El Arenal in the north) (Figure 3.4). Another important pole of urban growth in the south but outside

metropolitan areas has been the southern municipality of Tizayuca (depicted as the bottom-blue municipality in Figure 3.4), which recorded the second highest population growth in Hidalgo between 1990 and 2015. Tizayuca has always been a bridge between Hidalgo and Mexico City and is, in fact, the only municipality from another state that belongs to the metropolitan area of Valle de Mexico (ZMVM).[3] This phenomenon underlines the need for Hidalgo to develop forward-looking urban policies that address the effects of rapid population growth within metropolitan areas but also in surrounding districts.

Figure 3.3. Population Growth in Hidalgo's metropolitan areas and non-metropolitan areas, 2000-15
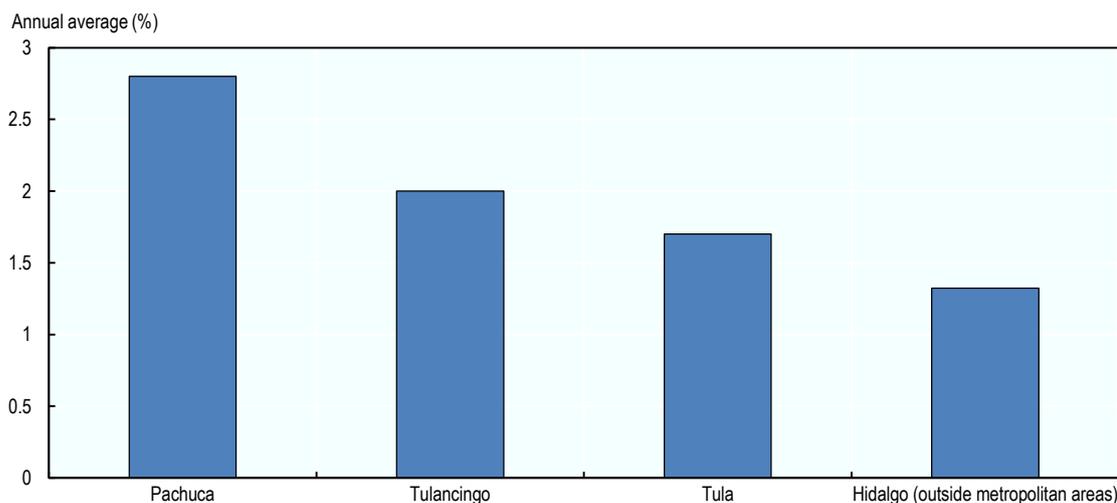
Source: INEGI (2016[7]), *Population Census*, http://www.beta.inegi.org.mx/proyectos/ccpv/cpvsh (accessed 28 May 2018).

Young, educated migrants have fuelled urban growth, though ageing is set to become a challenge

The rapid urbanisation growth in Hidalgo has occurred in parallel with inflows of people migrating to urban areas. Rural-urban migration is being driven by the search of higher incomes, quality of life and education opportunities. Most of the rural migrants in Hidalgo are located in urban municipalities with higher quality of life indicators (Franco, 2012[15]). Urban areas have also received migration inflows from municipalities of other states. Hidalgo is the sixth largest net receiver of inter-state migration in the country (see Chapter 1). The majority of such migrants has come from the state of Mexico and Mexico City (66%) mainly due to Hidalgo's lower housing prices and higher (Pérez, 2018[1]). This is the case of Pachuca de Soto that hosts one-third of the interregional migrants arriving in the state.

Figure 3.4. Population growth per municipality, 2000-15
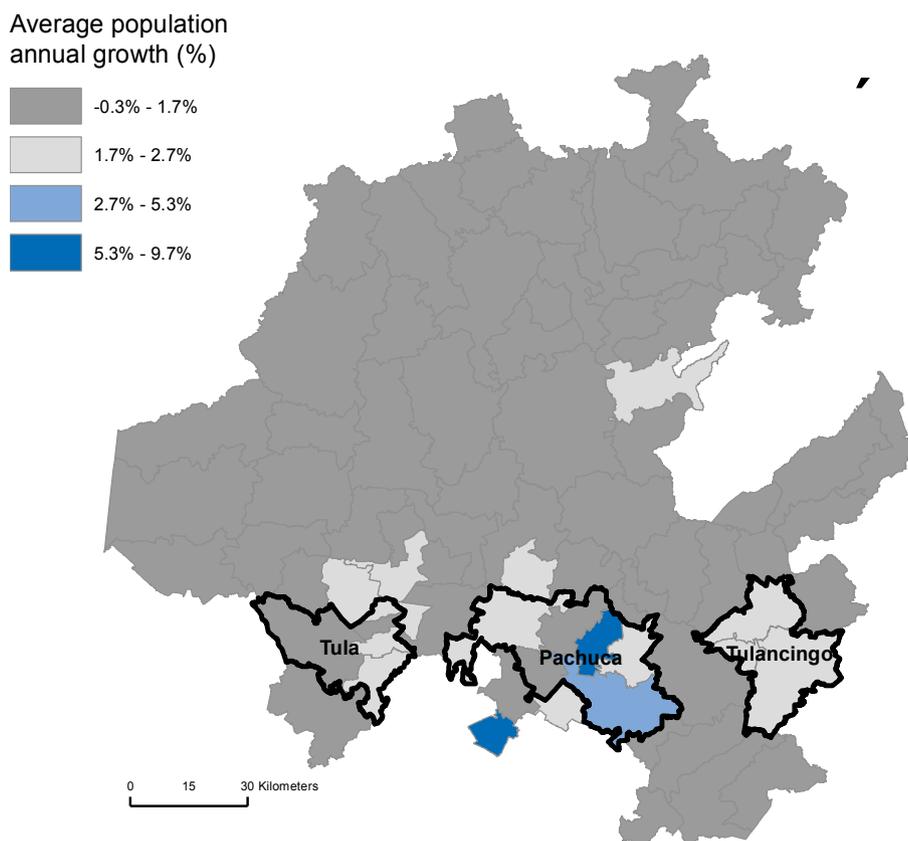
Source: Consejo Nacional de Población (2018[9]), *Datos de Proyecciones, Mexico,* http://www.conapo.gob.m x/es/CONAPO/Proyecciones_Datos (accessed 15 July 2018).

Migrants in Hidalgo are young and generally educated. The share of educated people within the migrant population in Hidalgo (94.3% with at least primary education) has been higher than the share of established dwellers (89%) (Franco, 2012[15]). The migrant population has also been relatively young, between 2010 and 2015, 77% of immigrants were of working age. These demographic dynamics represents a challenge but also an opportunity for the state. While migrants may add to a higher educated labour force in the state, they also put pressure on the current high labour supply. In 2014, more than three-fifths of the population in the 3 metropolitan areas of Hidalgo (66%) was of working age, with Pachuca hosting the highest proportion (68%). In fact, Pachuca ranks as the 5th youngest metropolitan area, measured as the proportion of elderly over the working-age population, among OECD metropolitan areas with less than 1 million inhabitants (Figure 3.5).

Despite the current young generation, the ageing population is set to become a key challenge for Hidalgo. The proportion of elderly population over the working age population for the 3 metropolitan areas will double in the next 15 years, passing from 8% in 2015 to 16% in 2030 (Government of Hidalgo, 2017[1]). Such an increase will add high pressure to public services provision such as healthcare and social security. Hidalgo must, therefore, start putting in place forward-looking policies to prepare urban areas for the

demographic change, which involves planning inclusive cities with better access to public transport and amenities.

Figure 3.5. Share of elderly population in metropolitan areas, 2014
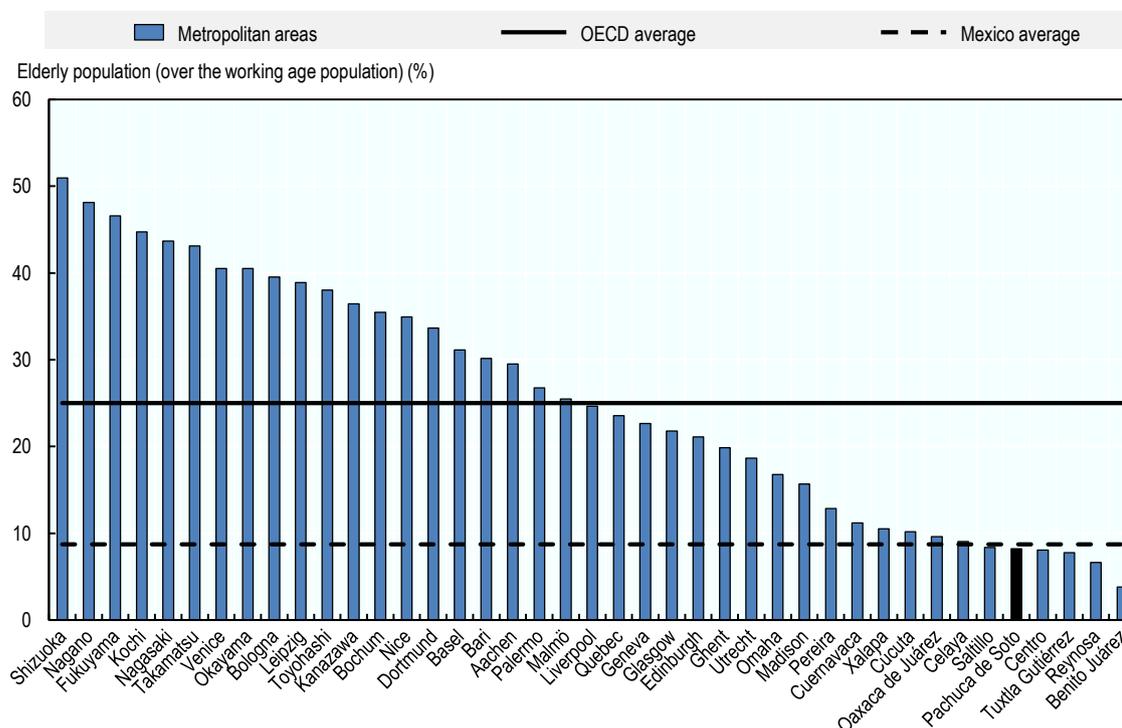
Source: OECD (2018[16]), *Metropolitan Areas*, OECD Regional Statistics (database), https://doi.org/10.1787 /region-data-en.

Pachuca is experiencing low-density and sprawl urbanisation, with a high share of fragmentation

Sprawling low-density cities move population away from jobs and services, and in turn are less attractive to individuals and firms (Dobbs, 2012[17]). Urban sprawl also creates congestion, challenges the provision of public services and represents a cost to the environment, reducing several dimensions of well-being in cities.

Hidalgo's urbanisation growth has also implied an expansion of urban land, mainly from the metropolitan areas. Between 2000 and 2014, urban land (measured as built-up areas) in Hidalgo increased by 26% (7 230 hectares) with half of such growth driven by the expansion of 2 municipalities in Pachuca Metropolitan Area: Mineral de la Reforma and Pachuca de Soto (Cano Salinas et al., 2017[18]).

Pachuca is experiencing one of the highest growth rates of population and urban land in Mexico and the OECD metropolitan areas. From 2000 to 2015, Pachuca registered the second-fastest population growth (2.9% annual average) among Mexican metropolitan areas (1.7%) and the fourth fastest among the OECD metropolitan areas (0.8%).[4] Such population growth has also come with high urban size expansion. Pachuca registers the fastest build-up growth in urban areas (43%) among Mexican (23%) and OECD metropolitan areas (15%) (Figure 3.6).

Figure 3.6. Population and built-up area growth in OECD metropolitan areas, 2000-15
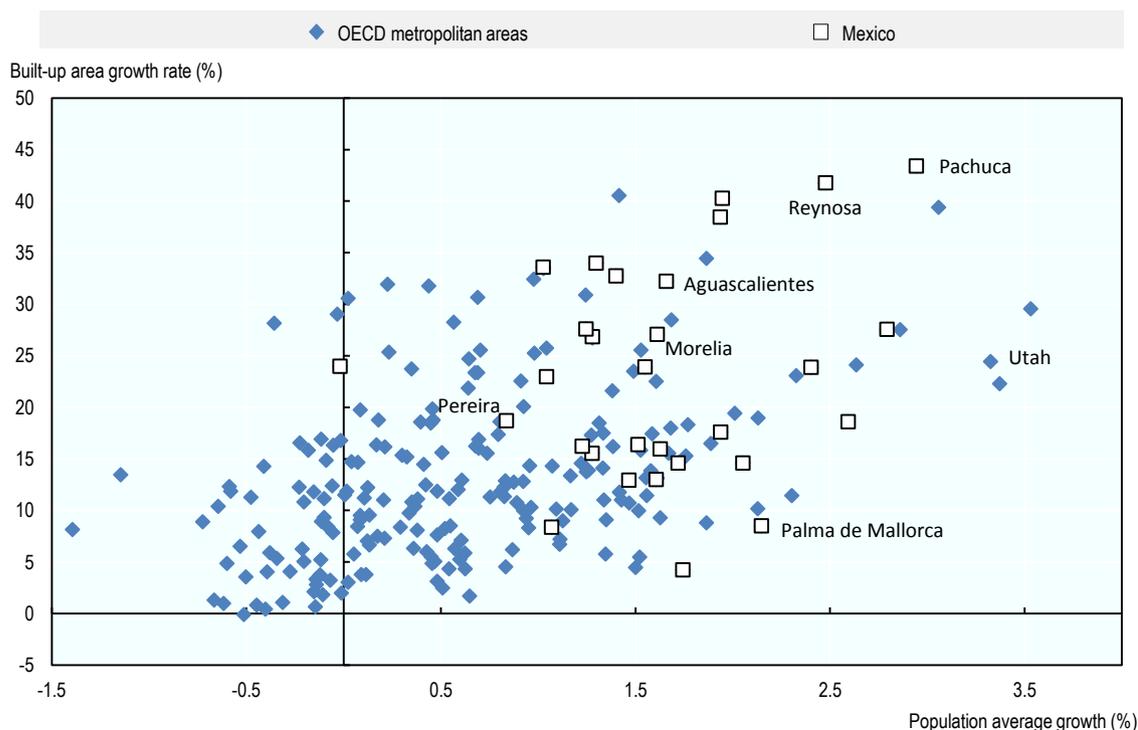
Source: OECD (2018[16]), *Metropolitan Areas*, OECD Regional Statistics (database), https://doi.org/10.1787/region-data-en.

The rapid increase in urban land has led Pachuca to growth with low density and high sprawl. Pachuca's population density (406 inhabitants/km²) is below the average of both the Mexican metropolitan areas (640) and OECD metropolitan areas with less than 1 million inhabitants (624). In terms of the degree of spatial concentration within the metropolitan area, since 2000, the population in the commuting area of Pachuca Metropolitan Area has been growing faster (3.8% annual average) than in the core (2.6%). By 2015, just 43% of inhabitants of Pachuca lived in the urban core, far below the average of both Mexican metropolitan areas (84%) and OECD metropolitan areas (70%) (Figure 3.7). The sprawl in Pachuca has mirrored the phenomenon at the national level where a housing model towards single-family, owner-occupied homes and the patterns of irregular settlements have explained the high growth of the urban areas' periphery (see Box 3.2).

Congestion and sprawl are already producing negative effects in Hidalgo's metropolitan areas. Congestion pollution is a growing problem across a wide number of OECD metropolitan areas and attempts to mitigate it have come to the forefront of the policy debate due to its negative impact on quality of life. Globally, 16% of lung cancer deaths and about 26% of respiratory infection deaths in 2016 can be attributed to exposure to fine particulate matter (PM 2.5) ((World Health Organization, 2016[19])). In the case of Hidalgo, according to the 2016 National Review of Air Quality, none of the 3 metropolitan areas of the state met the norms of Ozone, PM10 and PM2.5 in 2016 (INECC, 2017[20]). Pachuca is the third metropolitan area with the highest level of Ozone[5] in Mexico and Tula ranked as the second city with the highest annual average levels of PM2.5 (also affected by the proximity to the Miguel Hidalgo de Tula refinery).

Figure 3.7. Concentration of population in the city core, 2014
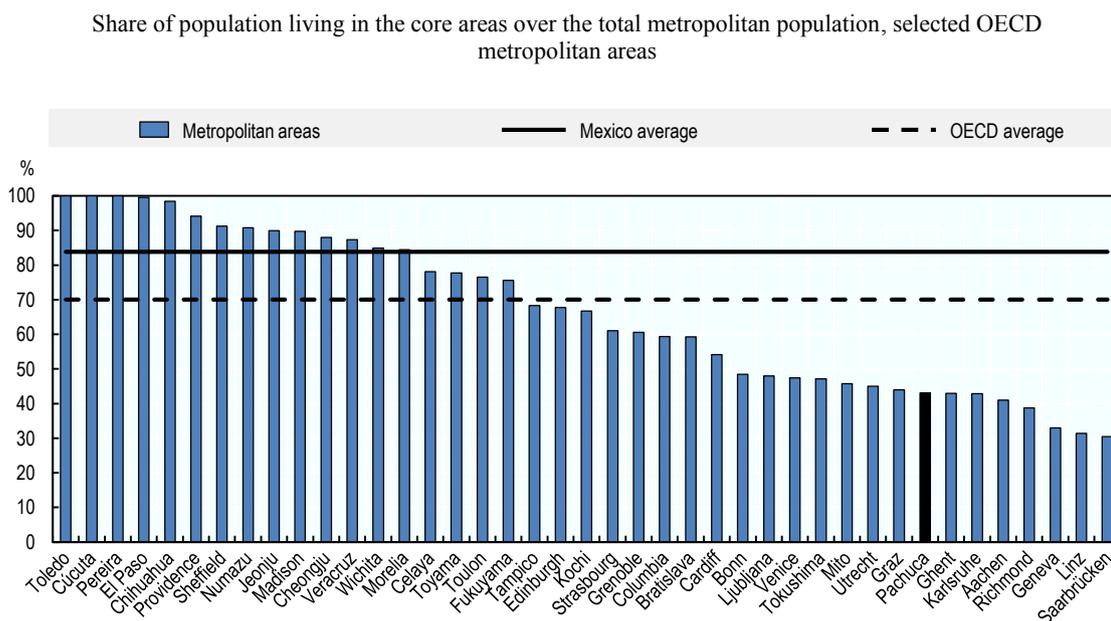
Share of population living in the core areas over the total metropolitan population, selected OECD
metropolitan areas

Source: OECD (2018[16]), *Metropolitan Areas*, OECD Regional Statistics (database), https://doi.org/10.1787
/region-data-en

Box 3.2. The challenge of urban sprawl in Mexico

Urban sprawl has consequences for mobility, contributing to rising motorisation rates and
making the provision of efficient, quality public transport alternatives more challenging
and costly; this is an issue that cities across Mexico face.

According to data in the *Registro Único de Vivienda* (RUV), in 46 of Mexico's 59
metropolitan zones, more than 70% of homes registered in the new housing registry
between 2006 and 2013 were built either in the outskirts or the periphery. Moreover,
roughly 90% of the housing stock consists of individual homes, which continue to make
up the majority of all new development. On the other hand, many other factors have
contributed to: rising income levels and lower transport costs; a fiscal and regulatory bias
towards single-family, owner-occupied homes; the prevalence of irregular settlements,
hampering effective urban growth management; municipal capacity gaps and ineffective
local land use controls for urban development; and a high level of municipal
fragmentation within metropolitan areas, making co-ordinated land use and transport
planning across neighbouring jurisdictions a challenge.

Poor land-use planning and permitting practices – as well as the absence of adequate land
available to low-income populations – results in the location of many settlements in risk-
prone areas, such as river banks and unstable hills, with devastating social and economic
costs when disaster strikes. These challenges are all the more relevant given that,
globally, Mexico is one of the areas with the most frequent occurrence of severe
earthquakes and tropical storms (OECD, 2013[21]). There has been a 4-fold increase over
the past 40 years in the average annual occurrence of disasters (OECD, 2013[22]). In late
2013, for instance, Hurricane Manuel left over 10 000 households in severe crisis in

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Acapulco, where many developments had been approved by local governments in flood zones.

Socio-economic segregation – in terms of income and education levels, as well as access to basic services like electricity, water and drainage – is also present, albeit different, across metropolitan zones. In some cities, low-income groups tend to be located on the outskirts, a trend that is fostered by lower land prices in peripheral areas. In other cases, there is a clear geographical divide (north/south; east/west) within the metro zone.

Sources: OECD (2015[23]), *OECD Urban Policy Reviews: Mexico 2015: Transforming Urban Policy and Housing Finance*, http://dx.doi.org/10.1787/9789264227293-en; OECD (2013[21]), *OECD Reviews of Risk Management Policies: Mexico 2013: Review of the Mexican National Civil Protection System*, http://dx.doi.org/10.1787/9789264192294-en; OECD (2013[22]), *OECD Environmental Performance Reviews: Mexico 2013*, http://dx.doi.org/10.1787/9789264180109-en.

Pachuca also experiences high municipal fragmentation. Pachuca is the 3rd most fragmented metropolitan area in the country with an average of 1.6 municipalities per 100 000 inhabitants, well above the country average (Figure 3.8). OECD research has shown that metropolitan cities in OECD countries with a higher level of governmental fragmentation experience lower economic growth per capita. Likewise, OECD analysis finds that for a given population size, a metropolitan area with twice the number of municipalities is associated with around 6% lower productivity (OECD, 2015[4]).

Figure 3.8. Average number of municipalities per 100 000 inhabitants, 2014
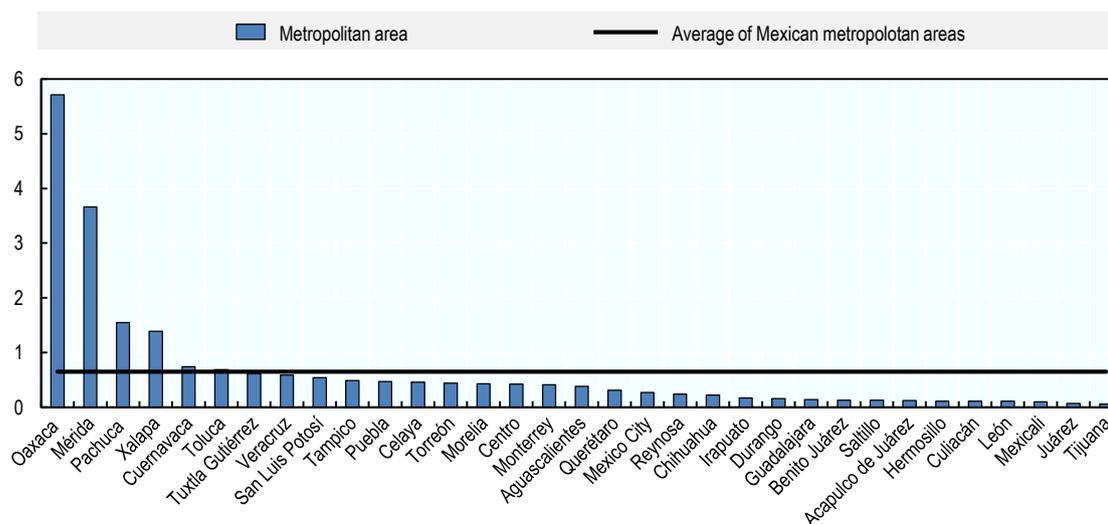
Source: OECD (2018[16]), *Metropolitan Areas*, OECD Regional Statistics (database), https://doi.org/10.1787/region-data-en

The rapid urbanisation and expansion of urban land, mainly driven by the three metropolitan areas in the south, requires close attention from the state. While slow urbanising countries or regions can develop and adapt to changes over time, rapid urbanisation requires massive investments in local and inter-city infrastructures and modern social structures in a short time (see (Glaeser, 2013[24])and (Henderson, 2010[25])). Hidalgo should hence pay attention to the type of growth of its cities and develop forward-looking scenarios of settlement patterns to create appropriate urban policies.

Despite the rapid economic growth, Hidalgo's metropolitan areas still perform below their potential

The metropolitan areas of Hidalgo are the economic centre of the state. With just slightly more than a 3rd of the population, the municipalities of the 3 metropolitan areas concentrate most of the economic establishments (48%) of the state and the employed population (42%). In particular, Pachuca Metropolitan Area is the main powerhouse, concentrating on its own the largest share of business (26%) and employment (24%) in the state, and it hosts the main political and academic institutions.

Pachuca metropolitan is experiencing rapid economic expansion and is closing the productivity gap with other Mexican metropolitan areas. Between 2003 and 2013, Pachuca recorded the 3rd highest GDP growth (4.9% annual average) among OECD metropolitan areas below 1 million inhabitants (1.9%) and the 4th among Mexican metropolitan areas (3.3%). During the same period, the labour productivity in Pachuca outpaced by a factor of 10 the growth rate (1.22% annual average) of Mexican metropolitan areas (0.22%) and the OECD comparable sample (1.01%).

Nevertheless, the Pachuca's rapid economic growth has fallen short in boosting job creation, income per capita and labour productivity levels (Figure 3.9). Metropolitan areas and dynamic medium-sized cities across the OECD have strong potential for job creation and innovation, as they are hubs and gateways for global networks such as trade or transport. In many OECD countries, labour productivity (measured in terms of GDP per worker) and wages also increase with city size (OECD, 2015[4]). In the case of Pachuca, economic expansion was not able to absorb the high population growth. Between 2003 and 2013, unemployment increased faster (9.8% annual average growth rate) than its labour force (4.8%), leaving an important share of the working-age population without employment (4%). In fact, the Pachuca's unemployment growth (10%) was the second fastest among the OECD comparable metropolitan areas (1.9%) and Mexico. Furthermore, despite having closed the gap, Pachuca's labour productivity ranked in 2013 as the 7th lowest among both Mexican metropolitan areas and OECD metropolitan areas below 1 million inhabitants.

Additionally, the benefits of Pachuca's economic growth and urbanisation have not been equally distributed. In many OECD countries, urban income inequality has been rising faster than overall income inequality, due to skills' distribution and the capturing of top earners, with income inequality increasing with city size (OECD, 2018[26]). In Pachuca, the gap between the average income of the population in extreme poverty and the one of the population out of poverty is higher than at the state level (0.13 vs. 0.10, data for 2010) (CONEVAL, 2010[27]).

Figure 3.9. Pachuca's performance compared with Mexican and OECD metropolitan areas
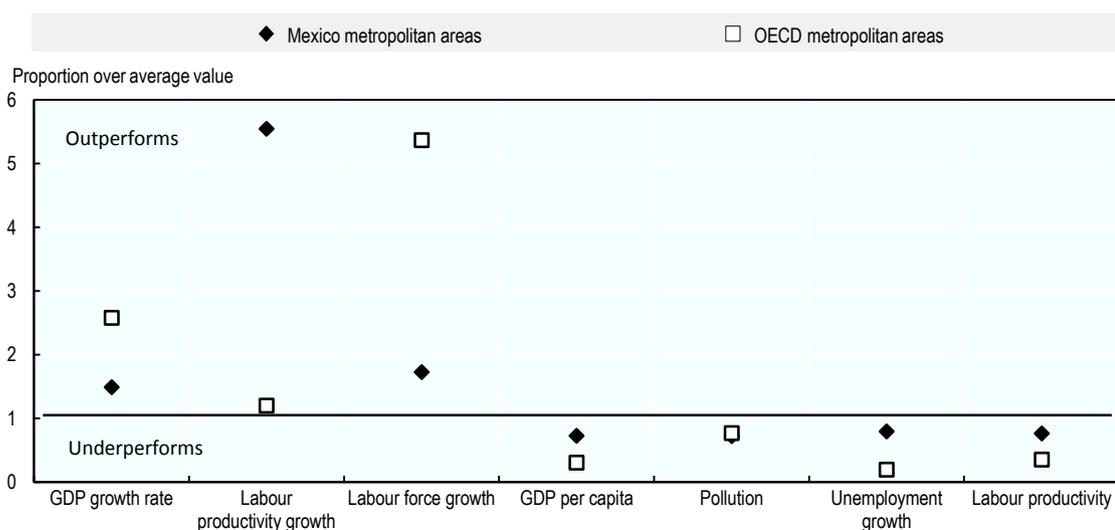
Note: Growth rates are from between 2003 and 2013. The rest of the indicators refer to 2013. GDP per capita and labour productivity are calculated with constant prices (in USD PPP), base year 2010. Pollution is the estimated population exposure to air pollution PM2.5 (µg/m³) for the average period 2012-14.
Each point represents the performance of Pachuca as a share of the average metropolitan regions.
Source: Own calculation based on OECD (2018[28]), *Metropolitan Areas (database)*, http://dx.doi.org/10.1787/a8f15243-en.

But inequality also goes beyond income. In the OECD the multidimensional living standards – a composite measure of income, jobs, health and inequality – are on average higher in metro areas. Benefiting from an early stage of urbanisation, the State of Hidalgo should ensure that economic growth in urban areas is shared with all population. The state can further promote the development of statistics at the local level (localities) within cities so as to follow up the bottlenecks for inclusive growth.

In sum, the enduring low level of urban population gives Hidalgo a unique opportunity to translate rapid urbanisation into economic benefits and well-being. This requires well-planned urban development and forward-looking policies to address urbanisation costs (congestion, pollution, inequality) and reap the benefits from agglomeration economies (increase labour productivity and income per capita). This also involves better governance co-ordination within metropolitan areas, in particular among environmental policies and public works, to control urban sprawl and reduce negative economic effects from municipal fragmentation. Given the pace of urbanisation in Hidalgo, planning service delivery and land-use in urban areas must be one of the priorities for urban policy.

Hidalgo's urban policy acknowledges most of the challenges in urban areas…

An effective system of metropolitan governance can provide the right conditions to take advantage of economies of agglomeration and reduce public policy fragmentation. Developing efficient policies on transport and land use in coherence with environmental norms will increase urban areas' attractiveness and capacity to generate wealth.

The State Development Plan of Hidalgo has set the goal of developing an integrated approach for urban policy (Government of Hidalgo, 2016[29]). While urban policies in Hidalgo have traditionally focused on providing public services for the urban population, the new administration's approach combines the traditional focus with a broader strategy

of development. This vision places planning and mobility at the heart of urban development and recognises the need for a sustainable urban growth with resilience and inclusive development (for the main strategies see Table 3.2). An example of this is the creation of the Secretary of Mobility and Transport, which is an effort to integrate urban mobility in cities.

The law framework on urban policy of the State of Hidalgo acknowledges the importance of co-ordination among different actors. The main law framework for urban issues is:

- The 2007 Law of Human Settlement, Urban Development and Territorial Planning (LAUHDOT). It is the backbone document for urban policy in the state, which provides the regulation for metropolitan areas and establishes co-ordination roles and participation mechanisms for urban development and territorial planning.

- This law was reinforced with the 2009 Law of Co-ordination for the Metropolitan Development of the State of Hidalgo, which provides the conditions and guidelines for the co-ordination among different levels of government and authorities to govern the metropolitan areas.

Table 3.2. Hidalgo's objectives and strategies for urban development

Objectives for urban development	Strategies (selected)
Promote the updating and adaptation of all planning instruments, such as urban development programmes	- Update and complement urban development plans at the state, regional and metropolitan levels
	- Promote schemes so that the municipalities generate a municipal programme of urban development
Promote densification of urban areas	- Establish urban buffer zones through zoning of land uses and included in urban planning instruments
Increase the sustainability and connectivity of public spaces in cities	- Develop inclusive equipment for all social groups, with special attention to the elderly
	- Promote the improvement of the urban image for all settlements
Generate a pool of sustainable urban projects	- Promote the creation of a municipal catalogue of urban projects in the town councils
Plan the sustainable development of the metropolitan areas through the implementation of programmatic and normative instruments	- Application of normative instruments for the planning of human settlements
Encourage sustainable motorised mobility through the incorporation of technological alternatives for the different means of motorised transport	- Promote the use of hybrid and electric vehicles, together with the necessary facilities and infrastructure
Strengthen and promote efficient non-motorised sustainable mobility alternatives for the population	- Develop and evaluate cycle routes and cycling infrastructure projects
	- Encourage the inclusion of sustainable urban mobility schemes in the municipal traffic regulations

Source: Government of Hidalgo (2016[29]), *State Development Plan 2016-22*

The state has a predominant role in the territorial co-ordination of urban areas, while the local level undertakes the implementation part. The main actors at the state level to plan and co-ordinate urban development are:

- The Secretary of Public Works and Territorial Planning (SOPOT). This is the main actor, entitled to conduct, implement and oversee the compliance of policies on territorial planning and urban development. Among the state's objectives on urban development, it is mainly in charge of promoting the update of urban development plans, densification of urban areas, increase the sustainability and connectivity of public spaces in cities, and the sustainability of urban areas and human settlements.

- In terms of environmental policy, the Secretary of Environment and Natural Resources (SEMARNAT) regulates the urbanisation process through the Ecological Management Land Plan that defines where urban areas can keep expanding and protects the natural resources of the state.

- The Secretary of Transport and Mobility (SEMOT). The State of Hidalgo created this secretary in 2016 with the aim to make cities more accessible to people and implement an integrated public transport system, with a long run plan of single transport card for all the transport modes. Among the state objectives, it is in charge of promoting sustainable motorised mobility and the efficient use of non-motorised sustainable mobility. The SEMOT aims to improve sidewalks and expanding the network of both the Bus Rapid Transit system and public bicycles.

- The Metropolitan Commission specifically addresses the governance in each metropolitan area. The LAUHDOT ordered the creation of this body for each metropolitan area. These commissions aim to lead the planning and the administration of urban areas as well as define – along with the SOPOT – the Territorial and Urban Development Plan. The commission has as members not only the municipal government belonging to the metropolitan area but also other municipal governments considered crucial for the urban area. In the case of Pachuca, for example, besides the seven municipal governments inside the metropolitan area (see Box 3.1), another four municipalities around the metropolitan area (Tizayuca, Tolcayuca, Villa de Tezontepec and Mineral del Chico) belong to the commission. The governance of metropolitan areas has been a key tool to reduce municipal fragmentation. For instance, the long territorial conflicts among both Pachuca de Soto and Mineral de la Reforma on responsibility and ownership of public services, public security and property tax were to a large degree mitigated with the creation of the metropolitan area of Pachuca and the Metropolitan State Council in 2009 (Pablo Vargas-González, 2011[30]).

- The Metropolitan Fund (*Fondo Metropolitano*). In Mexico and in Hidalgo, the federal government funding for metropolitan areas is channelled through this fund (the funding is part of the national budget devoted to subsidising state and municipal action on urban development. The operational rules for the Metropolitan Fund require the creation of a Metropolitan Development Council (*Consejo para el Desarrollo Metropolitano*, CDM) in order to receive funds (OECD, 2015[11]). In Hidalgo, the Metropolitan Fund has financed healthcare, transport infrastructure as well as maintenance and expansion of sewage and green areas across the three metropolitan areas (Pachuca, Tula and Tulancingo).

… but some issues remain

Metropolitan areas in Hidalgo lack a comprehensive urban development programme that works hand in hand with other strategic sectors and across different state secretaries. Most urban projects in the state are done under a sectorial strategy conducted by a single agency. For example, projects on housing and public works or concerning public spaces are mainly planned and implemented by the SOPOT, with little or no co-ordination with other agencies. The lack of complementarities among urban programmes can lead to negative impacts on the environment and land use as well as create public opposition to urban projects.

The lack of co-ordination stresses the lack of Metropolitan Development Plan. Metropolitan areas of Hidalgo do not have such a plan (Government of Hidalgo, 2017[1]), which creates problems for short- and long-term planning with lack of co-ordination and inefficient use of investments. The state should consider creating a Metropolitan Planning Institute, in charge of developing the concept behind the metropolitan area and supporting the creation of the metropolitan plan. It can also promote participatory planning and process geographical information and data. It should represent the metropolitan area in spatial planning matters and be funded by all municipalities in the metropolitan area and the state. The model of the IMEPLAN in Guadalajara, Mexico, is of interest (Box 3.3).

The investment decisions of the resources from the Metropolitan Fund risk following political interests with a small involvement from local governments. Given that the resources of this fund are not earmarked to an urban development plan, the selection of the projects to be financed could be based on political decisions rather than on priorities of the broader metropolitan area. Furthermore, the final decision of projects comes mainly from the state level, with many projects from municipal governments discarded due to technical weakness. These issues have in some cases created local government opposition to the selected projects, as was the case with the 2017 decision of using metropolitan funds to build a new TUZOBUS station that produced tensions among the state, Pachuca de Soto and Mineral de la Reforma. Improving the capabilities of municipal governments and their involvement in investment decisions on this fund will ensure sustainability in the metropolitan investment. Hidalgo should also further promote co-investments among municipalities to develop joint projects within the metropolitan area.

Furthermore, co-ordination with other metropolitan zones of the country could be more efficient. Interaction among metropolitan areas is a crucial dimension for a well-managed urban development. The proximity and economic interaction between the south of Hidalgo and the metropolitan zone of Valle de Mexico (ZMVM), the country's largest market and home to 20 million inhabitants, have already yielded to co-ordination mechanisms that are worth enhancing. For instance, Tizayuca participates in decision-making processes and co-ordinates urban plans for the ZMVM. Furthermore, in 2017, the state joined the Metropolitan Development Council of ZMVM with the aim to co-ordinate policies, investments and large infrastructure projects related to both areas. However, enhancing this co-ordination is not placed high within the objective of urban development in the state. Hidalgo should thus aim to increase joint projects with benefit to urban areas and surrounding municipalities in the state.

Box 3.3. The governance tripod of Guadalajara Metropolitan Area (GMA)

The Guadalajara Metropolitan Area has a long history of metropolitan governance. In the 1990s, its main political body was the Council for Metropolitan Development and the main regulation was the 1976 General Law for Human Settlements. Since then, the system has become more open and horizontal. As of today, the system embraces a broad range of stakeholders and comprehensive planning instruments.

The political body of the governance system is the GMA Metropolitan Co-ordination Board (MCB). Created in December 2012, it is an inter-municipal collegial organ for political co-ordination. The members are the mayors of the municipalities that constitute the GMA and the Governor of the State of Jalisco. Among the objectives of the MCB is to set the Metropolitan Agenda, the instrument that establishes priorities, objectives, strategies and actions for the metropolitan area.

The Metropolitan Planning Institute (IMEPLAN), operational since July 2014, is the technical organ of the metropolitan co-ordination system. It is an inter-municipal decentralised agency with legal personality and own assets. Its main objective is to develop and propose to the board the technical instruments for metropolitan planning, carry out research and studies, and propose alternative co-ordination mechanisms within the system. The main structural tools designed and developed by IMEPLAN are: The Metropolitan Development Programme; the Metropolitan Land Use Plan and the Map of Metropolitan Risks. The Metropolitan Citizen Council (MCC) is an intermunicipal advisory organ for citizen participation. The honorific membership can be held by grassroots leaders, representatives of non-governmental and professional organisations, scholars, researchers and private sector leaders. Every metropolitan municipality has up to three seats to appoint to the council and members are elected by a public and open call among civil society. The objective of this entity is to monitor and follow up on metropolitan matters and to report citizen complaints. In addition, the MCC can organise, receive, discuss and channel proposals from civil society regarding the metropolitan co-ordination system.

The metropolitan co-ordination system is based on co-operation and collaboration. After decades of slow concrete implementation and few successes in sectorial intermunicipality arrangements, the GMA is paving the way as an example – if not an inspiration – at the national level. Its laws, institutions and stakeholders are maturing to collaborate within formal frameworks defining a 25-year vision, together with tools for implementation.

Source: GIZ/UN-Habitat (2015[31]), *Case Study: Metropolitan Governance, Guadalajara Metropolitan Area, Mexico*, https://unhabitat.org/case-study-metropolitan-governance-guadalajara-metropolitan-area-mexico/.

Mobility requires special attention

In any urban context, efficient transport flows within cities facilitate the movement of goods and people in ways that can integrate neighbourhoods and minimise environmental damage through the reduction of vehicle emissions. The quality of cities' transport infrastructure not only determines the level at which economic growth can be translated into the national economy as a whole but is also a crucial factor in attracting foreign investors in cities and elevating the quality of life of urban residents. In particular, accessible urban transport is an essential component in facilitating urban mobility for low-income households, allowing them to access better job and education opportunities.

Hidalgo's road networks and restricted access to public transport provides limited conditions for mobility and commuting within and across its main urban areas. Most of the commuting to work is done by public transport, yet around one-third of public transport in Hidalgo operates illegally (Government of Hidalgo, 2017[1]). The high proportion of illegal transport puts passengers and the environment at risk. The second most common transport mode to work is on foot (Figure 3.10). Given the low density of Hidalgo's cities, the high proportion of travel on foot underlines the difficulties that people face to reach the workplace.

Figure 3.10. Transport mode to work in Hidalgo, 2015
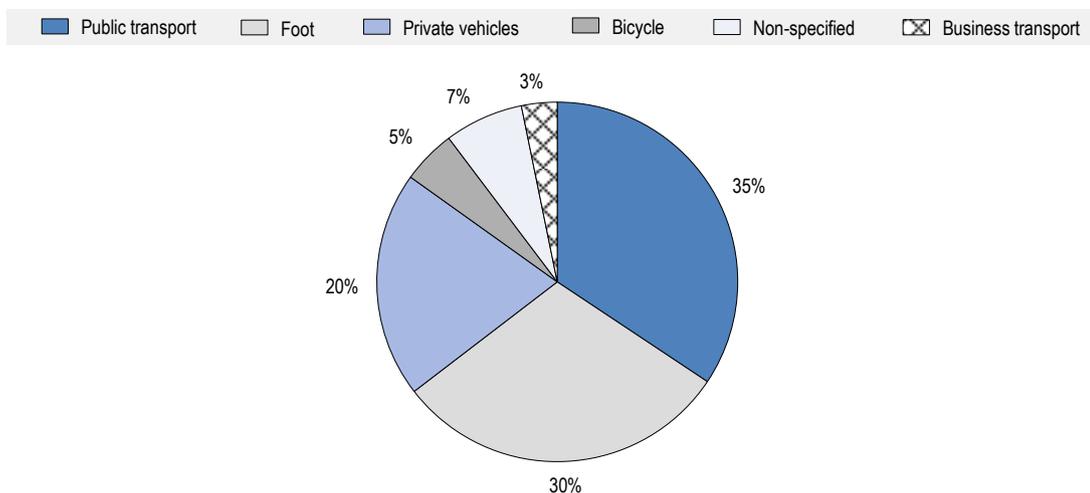
Source: INEGI (2015[32]), *Inter-census Survey*, http://www.beta.inegi.org.mx/proyectos/enchogares/especiales /intercensal/ (accessed 15 July 2018).

Pachuca has the only large-scale transport system in the state, the TUZOBUS. It is a one-line Rapid Transit Bus system created in 2015 that covers 18 km and conveys 110 000 passengers daily, with 33 stations and 19 feeder bus routes (Government of Hidalgo, 2017[1]). Despite its extension, the system covers only around 10% of the total daily commutes in Pachuca. There is hence a need to promote an integrated transport system that also reduces the share of illegal transport, which in some areas of the city amount to one-third of the public transport supply.

Another challenge for urban mobility in the state is the increase in the rate of motorisation. The motorisation rate is currently high in Hidalgo (382 vehicles per 1 000 people) when compared with the national average (341). With a rapidly growing economy and an expanding urban land area, more people will likely shift to private vehicles for their daily commute, raising congestions costs and putting further pressure on the environment. Against this backdrop, a holistic urban agenda is needed to promote the shift from cars and ensure a broader use of public transport.

The newly created Secretary of Mobility is a step in the right direction but it must be strengthened

While the State of Hidalgo acknowledges the importance of an independent agency to oversee and co-ordinate transport policy related-projects, the economic and institutional

capacity of the SEMOT are incipient and remain weak. This newly created secretary does not count with the institutionalised mechanisms, and capacity to become fully involved in urban planning. SEMOT lacks also staff and resources to conduct high-quality data analysis and long-term planning for an efficient operation. If Hidalgo aims to achieve an integrated urban development in line with environmental protection, it should further strengthen the role of SEMOT by considering the following:

- **Strengthen financial and staffing capacities for SEMOT** to further develop and co-ordinate "integrated public transport" in cities. The SEMOT can ensure that the integrated public transport system includes the co-ordination of all aspects of public transport provision (bicycles, BRT, public and private transport). It should include optimised routing and synchronised timetables between different lines and modes of transport. While this is an important precondition for a good public transport system, it is not sufficient to guarantee effective transport services. SEMOT should be able to ensure that public transport is efficiently operated and its functioning monitored through a clear institutional framework.

- **Further expand the co-ordination powers of SEMOT** in urban (and non-urban) projects. The co-ordination and participation in the urban development of a governmental entity responsible for transportation and mobility are critical to ensure that policies tackle metropolitan-wide challenges in a harmonised way, particularly for cities that expand in size (OECD, 2015[4]). This secretary can play an important role in urban planning through the co-ordination of different sectors and urban policy agendas, for example:

  o Land use policies and housing (SOPOT and SEMARNAT): The co-ordination between transport and land use can protect the space required for public transport infrastructure from other developments. It also yields to efficacy on the construction of new transport projects by meeting the demand, for example on far-away housing projects.

  o Transport accessibility (Secretary of Social Development and Secretary of Labour): Transport projects should also be oriented towards improving accessibility and reducing segregation. Transport subsidies or alternative modes of transport (particular vehicles or special routes) can benefit from co-ordination with social and labour policies (a current draft law on transport mobility for Hidalgo includes indigenous transport modes).

  o Business attraction (SEDECO): When co-ordinated with economic projects (new industrial park or business areas), transport planning can also increase their economic impact, the well-being and business environment of the urban area.

  o Public investment (Secretary of Finances – SHCP): Co-ordination between transport and fiscal mechanisms can accomplish the dual role of reducing congestion and increasing local revenues for infrastructure projects. Implementing a fee for using certain roads and streets during a period of time is not only a way to obtain additional resources to finance improvements in infrastructure and transport, but also to deal with traffic and its environmental consequences. Congestions charges in cities like London are a good example of this (it brought a decrease in the use of private vehicles by 30%) (OECD, 2015[11]).

To promote this co-ordination, Hidalgo should:

- Create incentive structures for co-ordination among secretaries within the State Development Plan. This can involve shared and transversal objectives with performance indicators that measure co-ordination (see Chapter 4).

- Promote vertical governance arrangements between the local and national level. For this matter, enhancing mechanisms for co-operation with the Federal Ministry for Transport and the Ministry of Environment would benefit transport projects in the state.

SEMOT can also play an important role in improving community involvement in mobility projects. Some of the construction projects of new stations of TUZOBUS have generated protests in the community due to the lack of socialisation. That is the case of the station of Central de Abasto, in the wholesale market, where local business went to strike, arguing the lack of communication on the project and its negative economic impact in the area. The state has set the goal of creating new routes and stations of TUZOBUS to better connect the metropolitan area. However, the new constructions have been carried out by the SOPOT with little involvement of the communities in its planning and little co-ordination with SEMOT. To be successful, the transport systems' expansion in the state requires raising citizen awareness and alignment with spatial and land use planning.

Land use planning

The governance and use of land affect a wide range of factors from the availability of food and clean water and the length of daily commutes, to the long-term sustainability of urban and rural communities, including the possibility for climate change adaptation and mitigation (OECD, 2017[33]). It is critical for land use planning to analyse how governments regulate land use and address public and private investment, the mechanism to allocate competencies across levels of government and the way land use is taxed in the territory.

A complex institutional environment for land use planning in Hidalgo

Mexico has a hierarchical planning system with several plans designed and implemented at each level of government. Land use policy in Mexico is legally based on two spatial approaches, territorial and ecological, which are supported by two main laws – the General Law on Human Settlements Territorial Planning and Urban Development (LGAHOTDU) and the General Law of Ecological Balance and Environmental Protection (LEEPAE) – and across the three administrative orders: federal (general), state (regional) and municipal (local). In Hidalgo, the regional legal framework derived from the national laws for land use is as follows:

- The State Planning Law for the Development of Hidalgo.

- The 2007 Law of Human Settlement, Urban Development and Territorial Planning (LAUHDOT), which defines the regulation related to territorial planning (last update in 2018).

- The Law of Ecological Balance and Environmental Protection of the State of Hidalgo (LEEPAEH) and corresponding regulations, which norms ecological land management. In the environment, there are two specific sectorial laws: the Law of

Sustainable Forestry Development and the Law of Management and Prevention of Waste

- The 2003 Law of Cadastre of Hidalgo.

The national government is an influential actor related to land use. According to the constitution, all land and water in Mexico belong to the nation and the national government is in charge of providing legislation to operationalise this principle (OECD, 2017[33]). It prepares the framework legislation that structures the planning system and is responsible for environmental issues and housing policy.

At the state level, the two most important plans mirror those at the national level: the State Spatial Development Plans and the State Ecological Spatial Plans. At the local level, three common types of plan exist: the Municipal Development Plan provides guidelines for urban development by following those established at the national level, while the Urban Development Plan and the Development Plan for Population Centres are comprehensive plans that contain zoning regulation for the built-up territory (Table 3.3).

Table 3.3. Organisation of land-use planning in Mexico

Administrative level	Overall planning	Territorial planning	Environment planning	Areas of regulation (selected)
Federal or national	National Development Plan (approved by parliament)	National Plan for Agricultural, Territorial and Urban Development	General Ecological Spatial Plan (approved by regulatory decision); Sectoral Programme for the Environment and Natural Resources	- Guidelines for land-use policies in urban and rural areas - Management plan of protected natural areas
State or regional	State Development Plan	State Plan for Sustainable Land Management and Urban Development	State Ecological Spatial Plans	- Designated state-protected areas - Use of land, zoning and construction - Small-scale land-use plans
Municipal or local	Municipal Development Plan	Municipal Urban Development Plan (PMDU); Population Centre Urban Development Plan (PMDUCP)	Local Ecological Zoning Programme (POEL)	- Planning frameworks for ecological and territorial development of municipalities - Main land-use plans for urban centres - Issuing building permits - Land administration (taxes, information, land-use change)

Sources: OECD (2017[33]), *Land-use Planning Systems in the OECD: Country Fact Sheets*, http://dx.doi.org/10.1787/9789264268579-en.

In Hidalgo, the state level focuses on priorities for sustainable land and resource management, while municipal governments establish key areas for growth and infrastructure investments. Municipal governments also develop land-use plans that

control land-use changes, manage cadastres and decide whether to issue building permits. Exceptions to this rule are mining and water extraction activities, which are regulated by national governments (OECD, 2017[33]). For territorial planning purposes, Hidalgo has grouped the 87 municipalities in 17 operative regions (Annex 3.A1).

The implementation of the land policy is conducted through spatial planning programmes. In the case of the environment, Hidalgo has the Ecological Land Management Plan for the state, and ecological management plans are meant to be developed for the 17 operative regions and municipalities. In the case of land use planning, the programmatic side of this policy is addressed in the State Plan for Urban Development and Land Use Planning. These programmes are elaborated by the respective governance institutions: Land Management Councils and Ecological Management Committees, where the authorities of the three branches of the Mexican government meet sectoral representatives, academics and citizens to ensure compliance with the programmes. In terms of metropolitan areas, Hidalgo is lacking a Metropolitan Development Plan for its metropolitan areas.

The SOPOT of Hidalgo is the main institution responsible for conducting and overseeing the compliance with the norms and laws related to land use planning and the implementation of the urban development plans. For the environment, SEMARNAT oversees the implementation and update of the ecological land management plans.

Overall, the State Development Plan of Hidalgo has acknowledged the importance of well-designed and comprehensive territorial planning by setting three main objectives (Table 3.4):

Table 3.4. Territorial plan strategy in Hidalgo

Objectives	Strategies
Further develop territorial ecological planning in the state and municipalities	- Elaborate, update and promote the development of integral territorial plans - Promote the development of municipal territorial plans (i.e. PMDU and PMDUCP) - Create a virtual platform to display the tools for territorial planning
Promote a sustainable rural development through proper territorial planning	- Define the technical bases that allow the sustainable use of the rural resources - Promote the sustainable development of marginalised communities by increasing the productivity of natural resources - Promote sustainable exploitation of existing forest resources - Promote resilient rural communities
Guarantee a sustainable urban development in line with environmental protection	- Promote the updating and adaptation of all planning instruments, such as urban development programmes - Promote densification of urban areas - Increase the sustainability and connectivity of public spaces in cities - Generate a pool of sustainable urban projects - Plan the sustainable development of the metropolitan areas through the implementation of programmatic and normative instruments

Source: Government of Hidalgo (2016[29]), *State Development Plan 2016-22*.

While the state strategies on territorial planning clearly recognise the existing bottlenecks on land use planning, their implementation still represents a question mark for the state. The actions proposed do not specifically define the means to increase collaboration among government levels and sectors (housing, transport, environment) and lack mechanisms to enforce the development of urban and ecological plans at the local level.

Co-ordination and enforcement are the main challenges in land-use governance

The division of governmental responsibilities for enforcing land use planning in Mexico creates gaps in the implementation phase. While the legally binding provisions of urban development programmes give responsibility to the three administrative levels of government (federal, state and municipal), the responsibility of planning implementation lies mainly on local governments (licences and construction permits). The quantity of regulations contained in the LAUHDOT indicates that the urban system and planning issues are abundantly addressed. However, the process of identifying and punishing irregularities is not very clear due to the excessive number of actors and government levels involved in the procedures to comply with established standards.

Ecological and urban plans are mandatory by law (LAUHDOT and LEEPAEH), but a big challenge for territorial planning in Hidalgo is the execution and update of those plans. The LAUHDOT underlines urban and territorial development plans as key instruments for the state and municipalities to define and ensure well-managed urban development. Nevertheless, the guidelines are not followed, not even at the state level, leaving territorial plans and instruments of land use planning outdated or missing.

Urban plans. These plans contain detailed planning rules, based on urban development laws and regulations. The State of Hidalgo does not count with an updated urban plan and relies on the 1979 State Plan for Urban Development. At the local level, 7 out of 84 municipalities have developed an urban development plan and just 5 have construction regulations. Lack of updated urban plans coupled with low capacities at the municipal level are generating gaps in the zoning at the local level, which in turn yields to chaotic urban growth.

Ecological management plans. These plans define, among others, the protected areas and the agricultural and forestry zones in the area and harmonise urban growth with environmental conservation. The Environmental Management Plan at the state level is nearly 18 years old (2001). Looking at the operative regions of Hidalgo (the division for territorial planning purposes), 7 out of the 17 operative regions in the state have conducted an ecological plan and 2 municipalities have each developed their own plan. Overall, there are 58 out of 84 municipalities (69% of the state territory) covered by an ecological land management plan. It is not surprising that the remaining municipalities are located in the north central part of the state. It is, however, worth noting that a region missing a plan is Valle de Tulancingo, which is a highly urbanised area that contains the metropolitan area of Tulancingo. The execution of these plans is also mitigated by a difficult relationship among municipalities, and *ejido* representatives with the federal government.

Urban governments fail to apply environmental considerations in their urban development projects. Metropolitan agencies and local governments do not always follow the guidelines of ecological territorial planning when it comes to implementing urban projects. From the 34 housing projects authorised by the Ministry of Public Works between 2001 and 2016, only 18 had an assessment of environmental impact (SEMARNATH, 2017[34]). In the particular case of Pachuca, between 2001 and 2016,

30 out of the 69 housing projects developed by the Pachuca's Secretary of Urban Development, Housing and Mobility did not include an environmental impact assessment (SEMARNATH, 2017[34]).

Cadastres are also outdated and poorly developed in the state. A modern cadastre is an integrated database system that holds information on land registration and ownership, physical characteristics, and environmental, socio-economic and demographic data (Lincoln Institute, 2004[35]). A lack of precise, up-to-date or digitally available cadastre data may create a variety of challenges that affect land management, such as title disputes, enforcement of planning decisions, problems in the collection of property taxes and in the planning of infrastructure, such as water and sewage pipes, electricity and telecommunication lines (OECD, 2017[33]).

Hidalgo has long searched for developing cadastres across the territory. In 2013, the state created the Cadastral Institute of the State of Hidalgo, which promotes information and communications technology (ICT) to improve cadastre development and monitoring. It created a Web portal to register and update the cadastres (*Sistema Integral de Gestión Catastral*) and train civil servants on the development and use of the cadastre.

Nevertheless, just one-fifth of municipalities in Hidalgo have currently updated their cadastres, while the rest have on average documents more than 15 years old. There are ten municipalities in the state without access to the Web portal to register and monitor cadastres (*Sistema Integral de Gestión Catastral*). The limited financial resources, the lack of institutional capacity and their lack of understanding of the benefits represent some of the barriers for municipal governments in Hidalgo to update the cadastres.

In Hidalgo, outdated cadastres have had negative impacts in the fiscal revenue at the municipal level. It has negatively affected the collection of own resources (property taxes account for almost three-thirds of municipal tax revenue, see Chapter 4) and the amount received from federal transfers (local revenue growth is one of the main criteria to distribute federal transfers to subnational governments, see Chapter 4). With a good land registration system, the government could also support financially other sectorial projects such as housing, parks, hospitals or transport infrastructure (Box 3.4).

Box 3.4. Land value capture: Funding the Crossrail project in London

As an overall provider of public transport, Transport for London (TfL) was created in 2006 and reports directly to the Mayor of London. TfL has wide-ranging responsibilities that include rail-based infrastructure, but also a range of regulatory responsibilities involving streets – these include implementing the city's congestion charge, as well as providing for bicycle routes and pedestrian infrastructure. London has been active in launching innovative transport initiatives that have required substantial investment. Accordingly, the city has looked to value capture strategies to render these measures cost-effective. One advantage has been the continuing rise in commercial property values, which has greatly enhanced the value of TfL's own real estate holdings. In addition, the rising trend has enabled the city to use a supplement to an existing property tax on commercial buildings as a powerful value capture mechanism.

The Business Rates Supplement (BRS) has been especially important in financing a significant proportion of the construction for the new 21-km Crossrail project. This large infrastructure development will provide an entirely new east-west rail linkage across the

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city. The project also draws revenues, as well as from the BRS, from a tax on new commercial development that will gain value from proximity to the Crossrail line. While this tax has proved to have some sensitivity to the ups and downs of construction activity, it also represents an effective value capture device. More generally, TfL is making ongoing efforts to persuade the government of the United Kingdom that all business rates paid in London should be devolved to local and regional governments for direct provision of services – which potentially could offset a decrease in the infusion of funds from outside London – although the outcome of this advocacy has yet to be determined.

Source: Salon, D. (2014[36]), "Location value capture opportunities for urban public transport finance", *White Papers Prepared for the Transit Leadership Summit, London*, Vol. 101(12), Institute of Transportation Studies, University of California, Davis.

Given Hidalgo's rapid urban and population growth, outdated territorial plans and lack of law enforcement jeopardises the natural capital of the state and the sustainability of urban development. To address those challenges, Hidalgo should undertake the following actions:

- Enhance the co-ordination mechanisms between SEMARNATH and other levels of government to ensure the sustainability of urban projects and strengthen regional environmental preservation programmes. This includes better integration of the environmental planning with urban plans. In this matter, the Federal Strategy for Ecological Land Management 2013-18 established ten action lines, which include promoting integral planning of the territory, considering the ecological land management and land use planning to achieve a sustainable regional and urban development. Furthermore, co-ordination between urban development and transport infrastructure, which should be jointly planned (SOPOT, SEMOT and SEMARNAT) to ensure new infrastructure projects fully correspond to needs of the urban areas (i.e. urban sprawl).

- The state should ensure urban and environmental plans are developed and updated across the territory. For this matter, two considerations are important:

  o SOPOT and SEMOT should have sufficient staff to provide assistance and monitor the evolution of the territorial plans. Under the subsidiarity principle, the state could do the plans of some municipalities if sufficient personnel are made available.

  o Provide technical assistance, and in some cases financial aid, to municipal authorities to prepare the urban and environmental plans. Currently, there exists co-ordination covenants between National Ministry of Agriculture, Territorial and Urban Development (SEDATU) and some municipalities, which can be expanded to all the territory.

- Involve communities in the development of urban and territorial policies. While the law in Hidalgo promotes the involvement of civil society in urban plans, the legal framework gives a smaller role to civil society participation (Edgar Demetrio Tovar García, 2011[37]). During the development or update of the land-use framework, citizen participation is mainly done through sporadic public consultation fora. Hidalgo could consider the creation of a permanent body to give input to territorial development issues. A Citizen's Council with technical and academic representation can create social control over development and updates to territorial and environmental plans. The Metropolitan Citizen Council

in Guadalajara Metropolitan Area can be a good example for Hidalgo ((GIZ/UN-Habitat, 2015[31]).

Ejidos represent another challenge for land use planning in the state (Box 3.5). *Ejidos* make up 43.7% of the territory of Hidalgo. They are defined as communal land, which cannot be sold; however, ownership titles can change hands if allowed by the Assembly of Ejidatarios. This has allowed the appropriation of land by real estate developers and the illegal construction of housing on land that may not be suitable for this purpose. It has also brought numerous issues related to cases whereby one person buys the titles for a piece of land, but such title will not be recognised by the next Assembly of Ejidos. Likewise, in some cases, the same plot of land ends up belonging to several people due to an unrecorded transfer.

Ejidal land property requires for the State of Hidalgo to improve co-ordination on land-use planning. Given that *Ejidos* have the autonomy on their own land-use, state infrastructure projects involving these areas have to be well socialised and co-ordinated with the Assembly of Ejidos. Lack of co-ordination can lead to delay in projects and even cancellation due to disagreement with *Ejidos* land-owners. This is, for example, the case of the private construction of the gas pipe in Tula, which goes through seven *ejidos* and suffered moratoriums (more than two years) due to legal reclamations from the *ejidos* government – even after having conducted a consultation process.

Notwithstanding this fact, Hidalgo has had positive cases of construction projects on *Ejidos* land. Some water parks have been developed through a community agreement process leading to the engagement of several families and becoming a sustainable source of income for them. The state should further replicate or showcase the successful cases of *Ejidos* and support the owners of this type of land with capacity on land management and governance.

Box 3.5. Mexico urban planning complexities related to the *ejidos*

Land tenure arrangements and the process by which agricultural land is converted to urbanised land in Mexico have left a complex legacy for modern-day housing and urban development. Three types of property exist in Mexico: private property, which accounts for around one-third of the country's land area; social property, which makes up more than half of the country's territory; and public/federal property, approximately 10% of the total, which includes national parks and waterways. Social property is comprised of both *ejidos* (around 90% of all social property) and *comunidades agrarias* (the remaining 10%). *Ejidal* land tenure, established following the Mexican Revolution, granted peasants perpetual rights to land for agricultural purposes without the possibility of selling, renting or mortgaging the land. A 1992 legislative reform modifying Article 27 of the Mexican Constitution altered the tenure status of *ejido* land. The reform authorised community landowners (*ejidatarios*) to sell, rent or mortgage the land, including to non-*ejidal* members, and to establish joint-venture contracts with private companies, essentially allowing for the privatisation of *ejidal* land. One of the ambitions of the reform was to give greater legal certainty to *ejidatarios* and to establish a legal framework that could result in increased land supply available for formal housing. Approximately 3 million households benefited from land regularisation following the 1992 *ejido* reform.

Nevertheless, the 1992 reform seems to have been drafted "largely in ignorance of its potential urban impacts" (Jones and Ward, 1998[38]). Moreover, the reform was drafted in a broader context of decentralisation that transferred increasing competencies to

municipalities, yet without a strong federal counterweight to guide policies aimed at incorporating *ejidal* land into urban areas. With *ejidal* land comprising just over 40% of all land in Mexico, most land available for urbanisation continues to be comprised of *ejidal* land on the urban periphery and beyond. Yet the process to privatise and, by extension, urbanise *ejidal* land is cumbersome, requiring: i) the measurement and allocation of parcels to each *ejidatario*; ii) the conversion of parcel rights into private property rights, requiring the approval of a majority of the *ejidatarios*; iii) confirmation that nobody with a legal right of preference (e.g. family member of an *ejidatario*) objects to the transfer or wishes to purchase the land; and iv) sale of land. Given the extent of *ejido* land in Mexico, the complexities of its urbanisation process represent a significant obstacle to legal and well-planned private development, encouraging circumvention of the law; these complexities have also made the process vulnerable to corruption.

Source: OECD (2015[23]), *OECD Urban Policy Reviews: Mexico 2015: Transforming Urban Policy and Housing Finance*, http://dx.doi.org/10.1787/9789264227293-en; Jones and Ward (1998[38]),

Rural development

Despite its rapid urbanisation process, a large share the population in Hidalgo still live in rural areas (46%) and most of the territory is classified as rural (97% of localities are rural areas). The rural economy has been an important contributor to the state's economy through the mobilisation of its assets including its natural resources (oil, mineral), agriculture products and tourism. However, while the south of the region, where the three metropolitan areas are located, is more developed and benefits from better public service provision and accessibility, the northern part of the state, predominantly rural, suffers from high poverty levels, lack of connectivity and public services.

Despite the importance of the rural sector in Hidalgo's economy and society, it tends to be associated just with the agricultural sector. Developing a new vision of rural development in Hidalgo may be necessary to allow for the diversification of the rural economy, which can unlock economic opportunities for local communities.

Although rural areas generate significant wealth, the people living there are generally poor

Agriculture is important in the state for social and economic reasons. More than half of the land in the state is dedicated to agriculture and farming activities (55%) (Figure 3.11) and the sector employs 19% of the state's working population, covering activities such as agriculture, farming, fishing and forestry. The state is the first producer of barley and alfalfa and ranks among the top producers of maguey (wild agave) and corn in the country. The state has also the oldest silver mine district in Mexico (Saavedra and Sánchez, 2008[39]) and the second biggest Mexican refinery. As shown in Chapter 1, manufacturing activities related to mining (e.g. refinery, processing) represent 43% of Hidalgo's manufacturing GVA.

Figure 3.11. Use of land in Hidalgo, 2017
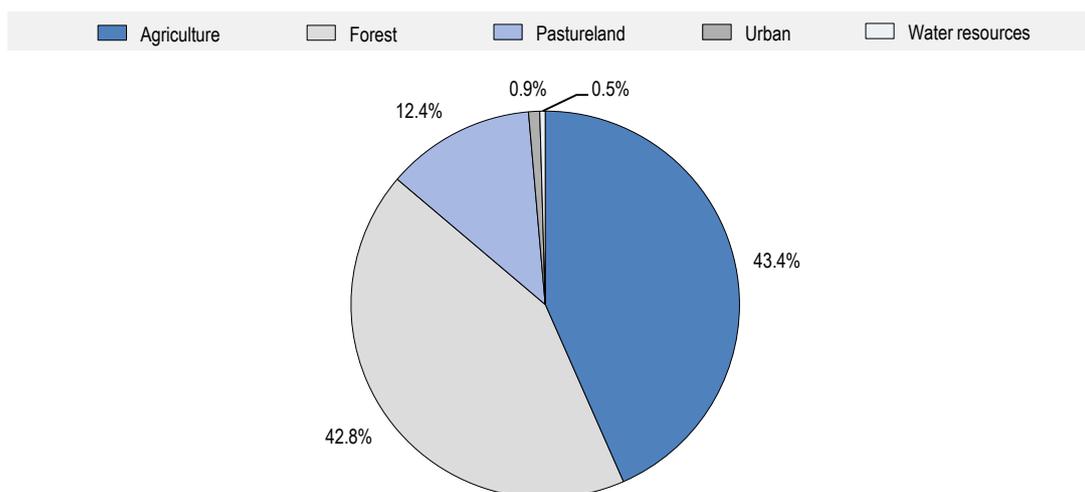
Source: Sectoral Plan of Environment and Natural Resources, (2017[40]) *Sectoral Plan of Environment and Natural Resources*.

Most of the land in Hidalgo is under *Ejidal* and communal property (51.4%) and the majority of the productive land (98%) is managed by small and medium farmers (Government of Hidalgo, 2017[41]). This fragmentation of land has created a barrier to boost agricultural productivity and increase income per capita. Furthermore, most of the area sown rely on rainwater (74%) with a small proportion using irrigation systems (26%). There is also a north-south divide on agricultural land development with most of the mechanised agricultural land located in the south of the state, while in the northern areas the land mainly relies on animal traction for harvesting (INEGI, 2016[2]).

As mentioned above in this chapter, Hidalgo is undergoing a rapid urbanisation that has led to the concentration of population in a few municipalities in the south. This phenomenon has left some municipalities, mainly in the mountainous northern area of the state, with relatively low levels of population density (Figure 3.12). Nevertheless, while the largest poles of people agglomeration are located around the metropolitan areas in the south of the state, some municipalities in the northern area have a population density (i.e. Huejutla de Reyes-314 inhabitants/km²) that should not be undermined as an anchor for development in the area.

Poverty in Hidalgo is geographically located in the northern areas with lower population density (see Chapter 1).[6] Hidalgo ranks as the seventh state with the larger extreme poverty in the country, with the northern municipalities experiencing the highest rates. Municipalities with sparse population and high dependence on one economic activity tend to be the most affected by poverty. In Hidalgo, the 20 municipalities with the highest poverty rates in the state (average of 80.1%) have a lower population density (92 inhabitant/km²) than the average of the state (205 inhabitants/km²) and the 20 municipalities with the lowest poverty rate (density of 449 inhabitants/km² and poverty rate of 36.6%).

Figure 3.12. Population density per municipality in Hidalgo, 2015
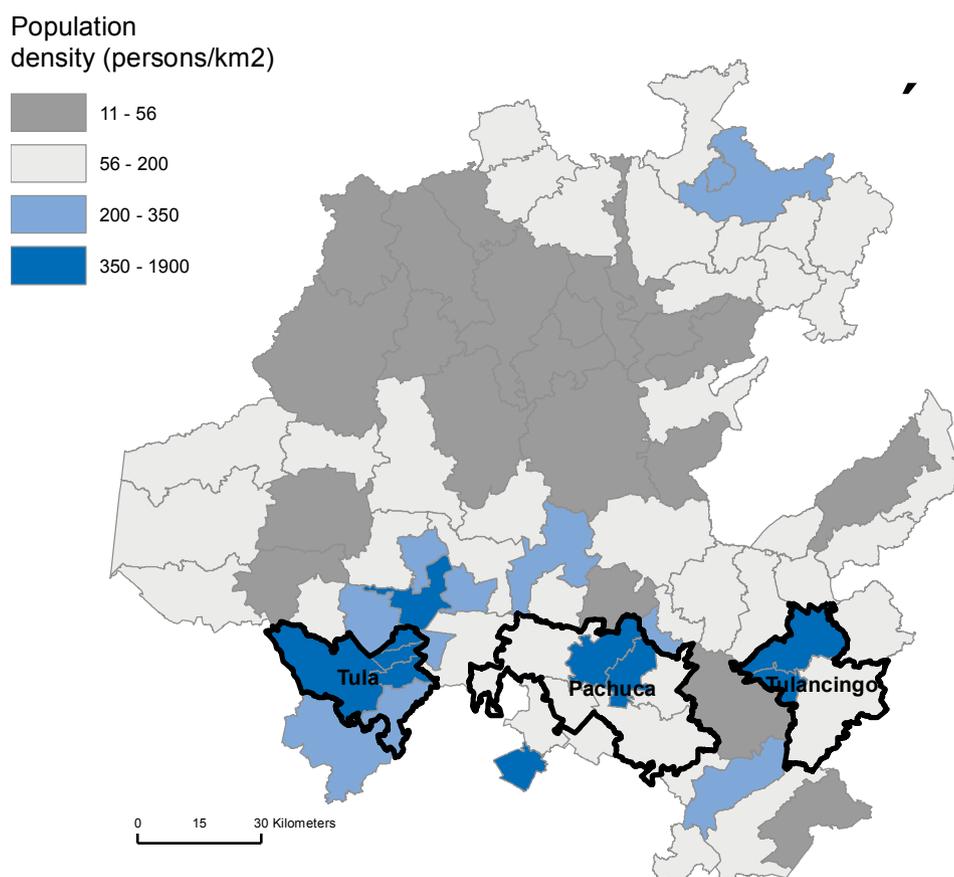
In addition, poverty is related to a high share of agriculture activity. The 10 municipalities with the highest poverty rates in the state have an average of 45% of their working population in agriculture activities, above the portion of agriculture within the 10 municipalities with the lowest poverty rates (7%). Overall, the extreme poverty in the non-metropolitan areas of Hidalgo stands at 13% of the population, far above the 3% in metropolitan areas (own calculations based on CONEVAL (2015[42])). This gap (10 perceptual points) is high when compared with Morelos (8) (the Mexican state with a similar poverty rate in 2015) and Nuevo León (3), although lower than states with higher poverty rates such as Veracruz (11) and Chiapas (25).

Poverty in Hidalgo's rural areas is associated with both income and social dimensions. Poverty in Mexico is measured with a multidimensional approach, taking both income and social deprivation into account.[7] In Hidalgo, poverty from income deprivation (54%) is larger than social deprivation (21% of people) (see Chapter 1). At the local level, the bottom 20% of low-density municipalities have a higher income and social deprivation (average of 70% and 30% of the population respectively) than the top 20% of high-density municipalities (51% and 17% respectively). The higher rates of the social dimension of poverty in low-density municipalities are related to social security deprivation, utilities and education (Table 3.5). Needless to say, the municipalities with

the highest level of social security deprivation (Huazalingo) and utility deprivation (Xochiatipan) are both located in the northern part of the state.

Table 3.5. Poverty by type of deprivation and municipal density, 2015

Populations affected by deprivation, percentage

Municipalities by population density	Income deprivation	Social deprivation	Education	Health	Social security	Quality housing	Utilities	Food
Top 20% (higher than 260.7 people/km²)	51	17	13.8	20.4	64.8	8.1	15.3	20.1
Bottom 20% (lower than 53.2 people/km²)	70	29.9	28.1	12.7	80.9	12.1	42.7	22.3
Gap bottom 20% - top 20%	19.0	13.3	14.3	-7.7	16.1	4.0	27.4	2.3

Note: The top 20% and bottom 20% are the municipalities with the 20% of highest and lowest density level respectively.
Sources: CONEVAL (2015[42]), *Measurement of Extreme Poverty, Mexico*; INEGI (2015[32]), *Inter census survey*.

Alongside poverty, labour informality in Hidalgo is intertwined with rural municipalities. The nature of seasonal labour and the low enforcement of labour policies from the state level makes dwellers in rural areas prone to higher rates of informality. The labour informality rate in the bottom 20% of low-density municipalities (85%) is, on average, higher than the one in low-density areas (71%) and metropolitan areas (68%).

Furthermore, there is an important ethnic component correlated with poverty. Hidalgo is home to more than 1 million indigenous people (36% of the state's population) which ranks it as the 5th state with the highest share of the indigenous population in the country. Almost 80% of indigenous people live in low density rural areas (less than the average state density – 188 people/km²), particularly in the mountains and in the jungle area where poverty rates are higher. Indigenous people experience a lower quality of life: 88% of indigenous areas have houses without mains water supply and more than 90% do not have a connection to sewage. The new generation is also experiencing important gaps with 16% of indigenous children below 5 years old suffering from chronic malnutrition in 2012 (the state's average was 13%) and more than two-fifths (42%) of indigenous schools lacking access to water from the public network.

This issue also tends to occur in some OECD regions with a high share of indigenous people experiencing lower socio-economic outcomes. Some countries and regions are moving towards a new development framework based on economic development devolving responsibilities and more resources to local communities in order to promote bottom-up development processes. This approach also recognises the need for a stronger economic integration between indigenous and non-indigenous communities and programmes.

Hidalgo's rural areas are also home to a high proportion of elderly population (three-quarters of the farmers in the state are more than 60 years old), which in turn own a big share of agricultural land (47%) (Government of Hidalgo, 2017[1]). In particular, the top 3 municipalities in the state with the highest proportion of elderly population (inhabitants aged 65 years or more) are predominantly low-density municipalities in the north of the state; Eloxochitlan (17% of elderly population), Huautla (16.9%) and Juárez

Hidalgo (15.7%). This characteristic poses extra challenges for public services delivery in terms of the cost and type of services needed by older populations.

In summary, rural areas in Hidalgo tend to have high poverty rates related to both social and income dimensions, low population density, high specialisation in primary production activities with high labour informality and a large share of indigenous and elderly population. Improving service delivery to rural areas, especially low-density municipalities, and developing alternative sources of income for rural households is essential to address the south-north divide and in turn boost wealth in the state. To achieve this, Hidalgo should:

- Promote joint projects among low-density municipalities to trigger agglomeration benefits and make the delivery of public services more efficient. Experiences like the revitalisation strategy in Japan can help Hidalgo to provide public services with economic sustainability (Box 3.6).

- Promote the diversification of endowments and strategies to search for different income sources that attract people and investment. This will require further identifying the specific natural, cultural, economic and social assets and potentials of every municipality. As the next subsection will describe, the State of Hidalgo has made some efforts in this direction, but with a lack of co-ordination and clear objectives.

Box 3.6. Revitalisation of rural areas

The "sixth" industrialisation of Japan is a strategy that vertically integrates the primary, secondary and tertiary industries to turn agriculture, forestry and fisheries into value-added industries through co-operation between a spectrum of sectors and industries. To accelerate the strategy, Japan's Ministry of Agriculture, Forestry and Fisheries created the Industry Co-operation Network in December 2011. Its purpose is to offer opportunities to people from an extensive variety of areas such as agriculture and forestry, fisheries, manufacturing and finance, and include consumers, think tanks and researchers in order to interact and pool their knowledge.

This strategy exploits the growing capacity of rural resources in rural farming and fishing communities to add value for future economic growth. Among other things, rural resources are seen as sources of clean energy to reduce global carbon dioxide emissions and as components for the development of new materials for applications in medicine and healthcare.

The Seiwa area of the Mie Prefecture is a positive example of this strategy. It is a rural district with a population of about 5 000 and an area of 53.6 km², of which 70% is forested and about 13% is cultivated. The average farm size is roughly 0.4 ha and the main products are rice, tea, Chinese cabbage, cabbage, white alliaceous, wheat and soybeans. By the early 2000s, Seiwa found itself facing an ageing and declining population, a lack of successor farmers and the growth of abandoned farmland, which, in turn, contributed to the encroachment of wild animals in cultivated areas. In response, the ten small hamlets in the area formed the Seiwa Rural Resource Management Association, which has put in motion an impressive array of local projects.

In an effort to enhance the landscape and protect farmland, the association organised maintenance of the canals and farm roads, including the planting of flowers on unused

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land, the creation of a biotope and the introduction of multi-use of irrigation water for community purposes (firefighting, environmental uses, etc.). Some farmland has been returned to a wild state, but co-ordinated land management has made it possible to do this efficiently and without harming the land that remains under cultivation. Household garbage is now composted. In an effort to do more than just preserve agriculture, the association has moved in the direction of the sixth industrialisation organising local festivals and building a market for distinctive local produce. This, in turn, has reinforced environmental performance, as the farmers found that it was better to market green produce than to use pesticides. This has also helped to promote green tourism in the area and to improve the quality of the water.

What began as a resource preservation exercise in the face of farm abandonment has thus led to a wide range of new activities. Though backed by the municipality, the association has not relied much on municipal or central government funds, though it has attracted sponsorship from Sharpe for some activities.

Source: Adapted from OECD (2016[43]), *OECD Territorial Reviews: Japan 2016*, http://dx.doi.org/10.1787/9 789264250543-en.

The institutional framework of rural policy in Hidalgo

The State of Hidalgo has defined sustainable rural development as one of the main mechanisms to increase wealth and reduce inequality in the state. The Hidalgo State Development Plan seeks to develop a sustainable rural economy by delivering basic infrastructure and services in rural areas and offering direct support to producers in order to increase their efficiency and strengthen their competitiveness, through four medium- and long-term strategic objectives:

- Promote the growth of productivity in the primary sector: implementing programmes of production and commercialisation, developing a production of alternative commercial crops and conducting a list of producers and the inventory of available agricultural resources.

- Address the needs of the agricultural sector linked to climate change: implementing an insurance programme for climate risks on vulnerable products, promoting reconversion towards products of higher added value and lower water requirement and fostering sustainable management of inputs (water, land).

- Reinforce the schemes and agribusiness to favour the reduction of trade cost: improving infrastructure systems for internal trade, promoting the association of small producers, supporting producers to reach different markets through training and market events.

- Strengthen the producers to increase their competitiveness: promoting the modernisation of agricultural processes, encouraging links between higher education institutions and producers, and fostering phytosanitary measures.

These measures ultimately seek to address some of the most pressing challenges of the agricultural sector: i) regional imbalances in production systems; ii) deficient marketing channels with excessive intermediation; and iii) the atomisation of land tenure with little access to economies of scale due to poor organisation among producers.

The main responsibility for the implementation of rural policy in the state is incumbent on the Secretary for Agriculture and Livestock Development (SEDAGRO). To implement the former strategic objectives, SEDAGRO has launched six programmes to address basic challenges in agriculture (Table 3.6) and eight product-based strategies (Table 3.7) that aim to support a new strategy based on diversification and productivity. Overall, these programmes can be characterised by an approach of direct public intervention in the agricultural sector.

Table 3.6. Basic programmes to support the agricultural sector (selected details)

	Objectives	Strategy	Characteristics	Number of beneficiaries
Programme of convergence with Federal entities	Increase productivity and competitiveness	Provide infrastructure and machinery to producers	- Deliver tractors, spray pumps and other tools - Install irrigation systems	4 627 producers
Programme on irrigation	Strengthen irrigation units	Modernisation and rehabilitation of infrastructure	- Channel coating, tubing in crops - Rehabilitate water wells	22 000 producers
Insurance for catastrophes	Reduce climate change risks	Insure agricultural products	- Insure for various traditional crops: droughts, floods and frosts	8 088 producers
Programme on food security	Increase food production	Support and train poor populations and communities in extreme poverty	- Deliver infrastructure, machinery and animals - Generate individual gardens and family farms	10 216 households
Marketing of products	Increase competitiveness	Develop an advertising campaign and business events	- Create the brand "*Con Sabor a Hidalgo*" - Business events to link producers and retailers	253 projects and 1 810 producers
Agricultural health and safety system	Prevention, control and eradication of pests	Agricultural health strategies	- Direct assistance to producers affected by pests - Training to eradicate pests - Monitoring of farms and crops	258 877 producers

Source: Secretary for Agriculture and Livestock Development (2018[44]), *Public policy and agricultural development, presentation*.

The basic programmes promote the provision of subsidies by directly offering infrastructure, machinery and inputs. They guarantee minimum conditions for competitiveness such as health and safety systems, insurance for climate risks and modern irrigation. Concerning the strategic programmes, they aim to boost quality in strategic product and promote sustainability for farmers' production. Programmes such as Contract Farming seek to overcome the challenges of low economies of scale and the extra costs for farmers with local brokers while ensuring a constant demand for the products. The security of medium- to long-term contracts allows farmers to plan production and make long-term investments and technology.

The basic and strategic programmes are evidence of the paternalistic approach of Hidalgo when it comes to rural policy. In some programmes, the Secretary of Agriculture farms agricultural products to then offer them for free or at a lower cost to farmers. Although some programmes focus on involving producers in the post-production process, such as the marketing of products programme, the general approach of the State of Hidalgo remains largely focused on assistantship. Offering direct in-kind subsidies, such as seeds, trees or fish can work to lift rural population out of poverty but it may also create

dependent relationships in the medium and long run consequently hindering competitiveness and productivity.

Table 3.7. Strategic product-based programmes to support the agricultural sector (selected programmes)

	Objectives	Strategy	Number of beneficiaries
Kilo per kilo	Generate saving to producers	Government gives 50% of required seeds to producers of corn, barley and oats	4 013 producers
Production of coffee and maguey trees	Promote quality products	Government grows trees and then transplants them on the farmers' land	Not indicated
Fish production	Strengthen state aquaculture and improve food security	Food assistance and in-kind subsidy Government sells fish at cost to producers	Not indicated
Genetic improvement of livestock	Promote genetic improvement of livestock	Government offers quality inputs for breeding	244 farmers
Credit without collateral	Offer credit and financial training	In partnership with state financial institution, government offers credit without collateral	782 people received credits
Productive reconversion programme	Promote change of traditional crops for others with higher added value	Reconversion of unproductive lands to mainly avocado	200 producers
Contract farming	Guarantee demand and fix price to producers	Government plays the role of intermediary, linking private companies and producers	Not indicated

Source: Secretary for Agriculture and Livestock Development (2018[44]), *Public policy and agricultural development, presentation.*

To modernise agriculture, a cultural barrier must also be attained by convincing farmers to access technology and adopt new production methods, rather than focusing on traditional practices based on self-consumption.

- The Secretary of Agriculture has established strategies to disseminate the positive outcome of farmers involved in modernisation and marketing programmes. The state should support a further expansion of this practice.

- Hidalgo may consider expanding social education programmes in rural communities on innovation and technology. Farmers can further benefit from training programmes to better understand the benefits of innovation and learn how to seize the opportunities that technology uptake can generate. Programmes such as the training on genetic improvement of livestock, agricultural health or marketing of products help to raise local awareness of the importance of ensuring production quality standards, increasing value and improving access to markets.

The certification campaign that Hidalgo is conducting with farmers has allowed them to open new markets. It enabled the dispatch of the first shipment of tomato *aji* to Texas in the United States, after 18 years since the last agricultural exportation to that state. Social education initiatives can also promote greater co-operation among producers, which could facilitate the approval of credit requests, prompt producers to learn from each other, allow groups of small farmers to market their output together to get a better price, and also introduce a more entrepreneurial vision linked to rural activities.

It is worth noting that most of the basic institutional programmes of SEDAGRO prioritise producers that live in marginalised and indigenous areas. Agricultural programmes such

as food security embrace a social assistance component focusing on supporting the economic agents that reside in the different territories. The state should seek better co-ordination between local and federal programmes to target poor population: for example, it could search for greater synergies between social objectives and the federal programme *Cruzada Nacional contra el Hambre*. This programme, implemented in co-ordination with Mexican states, has an important focus on indigenous communities and includes five municipalities in Hidalgo (Huehuetla, Huejutla de Reyes, San Bartolo Tutopec, Xochiatipan and Yahualica). It addresses the multiple dimensions of poverty in rural areas ensuring permanent access to quality food for people in extreme poverty, promoting community kitchens, full-time schools, family gardens and cash transfer with coupons.

The mining sector needs to foster synergies with local communities and complementary sectors. Mines, such as the district Pachuca-Real del Monte, have played an important role in the territorial process by historically defining the first agglomerations of the population in the state (Saavedra and Sánchez, 2008[39]). In Hidalgo, the richness of the soil is coupled with abundant water resources and traditional workforce. The refinery of Tula is the Mexican refinery with the second largest capacity in the country. Despite the economic importance of the sector and its relationship with rural communities, the State Development Plan 2016-20 falls short on defining strategies to foster synergies between this sector and local communities or complementarity sectors.

Hidalgo does not have a fully-fledged rural policy, but a large number of programmes. This range of programmes may facilitate matching needs and policy responses. However, it can lead to the duplication of initiatives and lack of capacity for large scale projects. Yet SEDAGRO is the main responsible for the state's rural policy, there are other sectorial programmes with a rural-specific focus:

- Social development and healthcare: A large number of social programmes provide transfers to poorer households and invest in public services and basic infrastructure.

- Public works: In 2016 the state set up some agreements with carriers from the northern region of the state in order to concession rural-mixed public transport, through a deferred payment scheme based on the purchasing power of each area.

- Education: The state launched the Digital University of Hidalgo with the aim to generate a technological system that allows the expansion of higher education coverage in the state, offering educational services mainly to remote communities and vulnerable groups.

- Health: Medical seminars have been held to bring prevention and medical care services to people from rural and remote communities, who usually cannot reach existing health centres.

The Secretary of Economic Development (SEDECO) has developed a strategy to close the north-south regional divide. By following a co-ordinated territorial agenda among state and municipalities, the State of Hidalgo has aimed to increase private investment along the territory. The strategy aims to attract private investment at the local level based on the potential assets of each municipality and encourages municipal governments to follow a private-led approach, focusing on businesses, monitor investments and promote the local economy. SEDECO identified the vocations and characterised the economic potential of each municipality.

Since the initiatives from different secretaries are not connected to a regional strategic framework or governance arrangement, policies are not complementary. This problem is apparent in the lack of connection between economic development and social programmes, which will need to be addressed in order to make further progress in reducing rural poverty and growing rural economies. For instance, some of the basic programmes led by Secretary of Agriculture, such as the food security programme, prioritise those who live in marginalised and indigenous areas. These programmes could have a greatest impact if co-ordinated with programmes set up by the Secretary of Social Security at the state level or with the programmes led directly at the federal level (i.e. the aforementioned *Cruzada Nacional contra el Hambre*).

Hidalgo's various programmes promoting rural development are insufficiently co-ordinated. The Secretary of Agriculture is responsible for a large number of programmes and it does not have the capacity or the power to co-ordinate a broad rural development agenda. Lack of the appropriate profiles, resources and strategic vision from the state makes it difficult to conduct horizontal comprehensive plans across levels of government. Most programmes have therefore focused solely on the immediate relief of poverty and production increase rather than embarking on a more comprehensive policy that deals with the factors generating development and mitigating poverty.

There is a general need for strong leadership, a clear vision and greater co-ordination among policies and programmes. Rural development should enhance a whole-of-government approach in which programmes are co-ordinated and scaled up. It is crucial to develop a multidimensional policy that delivers regional accessibility, valorises cultural and natural amenities, and gives communities the power to govern some key issues, such as land use, directly.

Shifting from an agrarian-based to a more diversified rural economy

The agrarian vision that still prevails in Hidalgo is characterised by a sectoral approach to rural areas based on agricultural policy. Such a vision will face challenges to diversify the rural economy. There is a need to both modernise the agricultural sector as described in the previous section along with the creation of a new vision for developing rural areas in Hidalgo. The new vision will focus on unexploited opportunities in the rural territory, thereby making the territorial development the main object of planning, rather than just the agricultural sector. A rural development strategy for the State of Hidalgo could better boost its growth potential by harnessing opportunities for job creation in areas where the growth of traditional agriculture is becoming limited.

A shift of paradigm in agricultural policy would involve addressing multiple challenges, including adapting to modern marketing channels that are dominated by large competitive food chains, taking into account evolving production technologies (i.e. genetic engineering and biotechnology, among others), and better connecting farming to local society in terms of environmental effects, tourism amenities and opportunities for local and traditional foods. Since rural areas are largely concentrated in agriculture activities, with a large share of small- and medium-size farms, it will be crucial for the state to improve off-farm employment opportunities as a way to increase farm household income.

Adopting a new multidimensional territorial approach for Hidalgo's rural policy

Over past decades, there has been a shift in how OECD countries approach regional and rural development policies. In the past, these policies tended to focus on addressing disparities between regions through the provision of subsidies to compensate them for

lower incomes. Policies were designed by central governments through departments of state that delivered narrowly defined programmes with support for individual firms, incentives for inward investment, and a focus on infrastructure investment. Over time this approach has been seen as increasingly ineffective and unsustainable from a fiscal point of view.

The OECD Rural Policy 3.0 is a new framework on rural policy development that considers well-being across multiple dimensions of the economy, society and the environment by taking into account the differences of rural areas. It focuses on mechanisms for the implementation of effective practices, emphasising a focus on competitiveness and working with regions to unlock growth potential based on their unique assets and local conditions.

Table 3.8. The New Rural Policy 3.0

	Old Paradigm	New Rural Paradigm (2006)	Rural Policy 3.0 - Implementing the New Rural Paradigm
Objectives	Equalisation	Competitiveness	Well-being considering multiple dimensions of (i) the economy (ii) society and (iii) the environment
Policy focus	Support for a single dominant resource sector	Support for multiple sectors based on their competitiveness	Low-density economies differentiated by type of rural area
Tools	Subsidies for firms	Investments in qualified firms and communities	Integrated rural development approach - spectrum of support to public sector, firms and third sector
Key actors and stakeholders	Farm organisations and national governments	All levels of government and all relevant departments plus local stakeholders	Involvement of (i) public sector - multi-level governance, (ii) private sector - for-profit firms and social enterprise, and (iii) third sector – non-governmental organisations and civil society
Policy approach	Uniformly applied top-down policy	Bottom-up policy, local strategies	Integrated approach with multiple policy domains
Rural definition	Not urban	Rural as a variety of distinct types of place	Three types of rural: i) embedded in metropolitan region, ii) adjacent to metropolitan region, and iii) far from metropolitan regions

Source: OECD (2018[46]), *Rural Policy 3.0: A Framework for rural development*. https://www.oecd.org/cfe/regional-policy/Rural-3.0-Policy-Note.pdf.

The Rural Policy 3.0 can help guide rural policy in Hidalgo. This integrated approach has significant implications for how government works. It advocates different levels of government working in a more integrated way at a regional and local level. Within this framework, the specific policy responses for urban and rural areas are different and aim to develop complementarities between them.

Benefiting from rural-urban linkages to close the south-north divide

Alongside better co-ordination in rural policies, rural-urban linkages can help rural areas in Hidalgo to realise their growth potential. Urban and rural territories are interconnected through different types of linkages that often cross traditional administrative boundaries. These interactions can involve demographic, labour market, public service and environmental considerations. By defining three types of '"rural"', the OECD has carried out work in this domain that may support Hidalgo in developing a more coherent and better-integrated framework for rural policy development. This work puts an emphasis on the importance of better defining rural areas as a means to better understand rural-urban linkages (Table 3.9).

Table 3.9. Definition of rural areas and characteristics

Type	Challenges	Opportunities
Rural inside metropolitan area	- Loss of control of future - Activities concentrate on core - Loss of rural identity	- More stable future - Potential to capture benefits of urban, and avoid negatives
Rural outside, but in close proximity to metropolitan area	- Conflicts between new residents and locals - May be too far away for some firms, but too close for others	- Potential to attract high-income households seeking a high quality of life - Relatively easy access to advanced services and urban culture - Good access to transport
Rural remote	- Highly specialised economies subject to booms and busts - Limited connectivity and large distances between settlements - High per capita costs of services	- Absolute advantage in production of natural resource-based outputs - Attractive for firms that need access to an urban area, but not on a daily basis - Can offer unique environments that can be attractive to firms and individuals

Source: OECD (2016[47]), *OECD Regional Outlook 2016: Productive Regions for Inclusive Societies*, https://doi.org/10.1787/9789264260245-en.

Applying a special policy to remote rural regions in Hidalgo is needed to address bottlenecks and unlock potential growth. Remote rural municipalities display strong urban and rural interactions. In many OECD countries, the majority of the rural territory, but not the majority of the rural population, is found on areas poorly connected to a large urban centre. Nevertheless, within these predominantly rural territories, it is possible to find urban territories. The urban places in remote rural regions often obtain their economic function from the surrounding rural territory and follow a more traditional urban role of being market points for the export or trade of rural production and the import of inputs needed for rural production. This can be the case of Huejutla de Reyes, the biggest town in the northern part of the state, which can be supported to create better co-ordination with other municipalities of the area and local producers.

Exploring co-ordination with neighbouring states, especially in northern areas, should also be a priority for the state. Since some northern municipalities are closer to Veracruz than to the southern municipalities, the state should generate a differentiated policy for these municipalities to harness this interaction. Overall, the northern municipalities are less than 15 km distance to the road network of Veracruz. Co-operation between both states can improve the public services delivery of utilities, education or health. The provision of adequate infrastructure can also spur trade interaction and employment opportunities in the region.

Hidalgo should also seek to connect the northern part of the state directly with the ports of the Gulf. For example, Huejutla is closer to the port of Tuxpan (152 km) or Tampico (167 km) than to Pachuca (221 km). This proximity has not been yet exploited due to the lack of roads and train connections (see Chapter 2). A project of this nature could take the form of a joint initiative with the state of Veracruz, supported by the federal government. This road connection will unlock the productivity potential of the north, open rapid access to international markets and strengthen commercial links with Veracruz and other northern states.

The south of the state should also benefit from greater interaction with Mexico City. The important position of Tizayuca within the metropolitan area of Valle de Mexico can be used as an opportunity to spread the impact of economic and infrastructure projects into

the surrounding areas. Improving infrastructure projects or other large-scale projects can be beneficial from this partnership with Valle de Mexico.

In terms of rural municipalities close to Hidalgo's metropolitan areas in the south, they can benefit from the positive effects of the rapid urbanisation (Box 3.7). For these municipalities, issues like connectivity are less of a problem and they can attract new people and firms by finding their distinctive attributes. Attention to landscape and rural amenities can help them differentiate the quality of life offered in nearby cities while retaining many of the benefits of proximity to urban services agglomeration economies. Municipalities around Pachuca and Tula already present high rates of population growth, which can be seized to enter new markets and attracts new business.

Box 3.7. Proximity to cities and economic growth

Large metropolitan areas are important drivers of economic activity within countries and typically have the highest per capita GDP of all regions within a country. However, the economic effects of large metropolitan areas are not confined to their borders. They also play important roles in economic activity in surrounding regions. Their size and economic strength imply that they are key markets for many firms in rural areas. Even firms that do not directly sell to metropolitan areas rely on them due to their function as hubs for long-distance travel or because providers of highly specialised business-to-business services can predominantly be found within them. Therefore, large metropolitan areas form the geographical focal point of economic activity, even for regions that are a considerable distance away

Ahrend and Schumann (2014[48]) analysed the relationship between distance to metropolitan areas and economic growth in TL3 regions from 18 OECD countries over the 1995-2010 period. The study concluded that the GDP per capita of regions within 45 minutes of a metropolitan area with more than 2 million inhabitants grow on average by 1.8% per year. This growth rate is almost half a percentage point higher than the growth rate of regions within 45 to 90 minutes of metropolitan areas of the same size.

Source: Ahrend, R. and A. Schumann (2014[48]), "Does Regional Economic Growth Depend on Proximity to Urban Centres?", http://dx.doi.org/10.1787/5jz0t7fxh7wc-en.

Hidalgo can further unlock its tourism potential

Tourism has a long tradition in Hidalgo. It has supported the economy in many municipalities and has experienced stable economic growth over the last years. Nevertheless, there is a need to add more value to the sector and foster policy commentaries. Incentivising more bottom-up led approaches, creating a common brand-name and investing in backbone infrastructure can create new economic opportunities in the sector.

Tourism contributes to 1.5% of Hidalgo's GDP and employs 12% of its labour force. In 2016, the average hotel occupancy of the state (57%) was above the national level (52%). The state receives around 2.5 million tourists per year, equivalent to the entire population of the state. Most of the tourists are coming from other Mexican states (95%), mainly from Valle de Mexico. Domestic tourists have shown a more stable pattern, increasing constantly since 2009, than international ones which have overall decreased since 2001 and shown a more volatile pattern during the last years.

Hidalgo has four archaeological zones (mostly in the southeast of the state) and six museums administered by the National Institute of Anthropology and History (INAH). The archaeological zone in the municipality in Tula de Alledene, declared world heritage site, is the site that receives the largest number of tourists in the state (60% of the visitors to the state). The state also counts with five municipalities within the national brand *magic towns* (*Pueblo Mágico*) which recognise a limited number of towns based on their cultural and historical heritage. These include Huasca de Ocampo, Huichapan, Mineral del Chico, Mineral del Monte and Tecozautla, all located in the southern side of the mountain range of Hidalgo.

The tourism policy of Hidalgo

Tourism is high on the policy agenda of the country. Mexico's National Development Plan (PND 2013-18) explicitly recognises tourism as a strategic sector in the economy, with high capacity to create jobs, stimulate regional development, compete in global markets, contribute to growth in other economic sectors, and generate value through the integration in domestic production chains (Box 3.8). Competitive projects related to tourism are promoted across states and are supported by the federal government. Co-ordination between different levels of government mainly occurs within the context of specific programmes and initiatives, notably the Programme for Sustainable Regional Tourism Development and Magic Towns (PRODERMAGICO) (OECD, 2017[49]).

In Hidalgo, the Secretary of Tourism elaborates the tourism policy following the federal guidelines closely. The Sectoral National Programme for Tourism 2013-18 provides the policy framework for the state and for the municipal tourism plans and programmes.

Box 3.8. Tourism strategies in the National Development Plan 2013-18

Boosting planning and transformation of the tourism sector. Strategic actions: update the regulatory and institutional framework, better align tourism policy and actions of federal and state governments, improve budgetary and programmatic co-ordination and mainstream government actions, in line with national tourism policy.

Encouraging supply-side innovation and enhancing tourism competitiveness. Strategic actions: strengthen the infrastructure and quality of tourism services and products, diversify and innovate the product and destination offer, complement sun-sea-sand destinations with alternative offers (cultural tourism, ecotourism, adventure tourism etc.), develop a National Quality Assurance Certification System, develop competitiveness agendas for destinations, foster greater collaboration and co-ordination with the private sector, local governments and service providers.

Fostering greater investment and financing flows, and effectively promoting destinations. Strategic actions: foster and promote financing schemes with the development banks; develop a comprehensive international tourism promotion strategy and develop new tourism products to stimulate and consolidate the domestic market, supporting the efforts of the private sector.

Promoting sustainability and social benefit from tourism. Strategic actions: create instruments to help tourism be a clean industry, strengthen the tourism model based on

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economic, social and environmental sustainability, and promote the conservation and preservation of cultural-historical and natural heritage (e.g. responsible wastewater management, sewage and wastewater treatment, drinking water quality).

Source: OECD (2017[50]), *Tourism Policy Review of Mexico*, http://dx.doi.org/10.1787/9789264266575-en.

The State of Hidalgo aims to benefit from cross activities in tourism including ecotourism and social tourism. In that sense, the state has stressed the protection of the environment as one of the strategic priorities to keep the growth in this sector. The state strategy for tourism is divided into three main objectives indicated in Table 3.10. It seeks to achieve objectives by focusing on marketing and promotion campaigns, training and certifications and identification of new segments of tourism. The three objectives include:

- Position Hidalgo as a state with diversified and sustainable tourism.

- Consolidate existing tourism and increase the productivity of tourism providers.

- Encourage the provision of services with sustainability schemes.

Table 3.10. Hidalgo's strategy on the tourism sector

General objective	Strategies	Actions (selected)
Position Hidalgo as a state with diversified and sustainable tourism	Promote the tourist offer in the national and international local scope	- Marketing campaign by using the National Council of Touristic Promotion - Showcase travel programme with tourism agents
Consolidate the existing tourism services and increase the productivity of service providers	Strengthen the capacities of tourism service providers	- Certify the tourist services' providers - Promote the artisanal sector as a complement to tourism development
Encourage the provision of tourism services with sustainability schemes	Consolidate the existing tourism services offer	- Promote social tourism and contribute to the preservation of the historical heritage - Improve the infrastructure and adequate services of tourism activity.
	Promote the development of new tourism products	- Promote the necessary conditions to investors in the tourism sector
	Promote actions to identify and develop tourism on culture, gastronomy, environment and medicine	- Generate an inventory of resources and natural and cultural attractions

Source: Government of Hidalgo (2016[29]), *State Development Plan 2016-22*

The sectorial plan of tourism recognises the main bottlenecks and opportunities for the sector. It aims to improve the infrastructure for tourism, the professionalisation of tourism services and the marketing of local products. Furthermore, it acknowledges the importance of promoting local assets to develop the sector. Ecotourism, cultural tourism (e.g. indigenous communities and traditions) and medical activities are some of the markets the state wants to enhance.

Nevertheless, Hidalgo can improve its strategy by following concrete actions and developing an integrated approach for the tourism sector:

- **Integrate food experiences into sustainable tourism development in rural areas can help ease poverty**. There is a growing shift in the economy from easily reproduced goods and services to more unique experiences, especially those based on local food. The programme of magic towns, in which Hidalgo has five municipalities, has the goal to promote typical dishes among tourists. The uniqueness gastronomy of Hidalgo based on recipes and experiences with non-traditional ingredients such as El Nopal, worms and ant eggs can create a new source of income for local communities.

- **Strengthen and better showcase the cultural and natural resource-based attractions such as nature and water parks**. Most of these attractions are located in rural areas and managed by local communities (*ejidos*). The community-based tourism in Mexico not only empowers communities and helps preserve natural resources but also offers a unique experience to tourists (Toscana, 2017[51]). In Hidalgo, there are positive experiences of community-based tourism, such as the Tephe and the Geiser water parks that are boosting the quality of life for their communities (Box 3.9). Supporting the sustainability of the existing community-based tourism's initiatives and building upon successful cases to spur others can share the economic outcomes of the sector with a wider range of rural communities.

- **Clarify the strategy to enter into new niche tourism markets, such as medical and cultural tourism (e.g. indigenous communities and traditions)**. The Secretary of Tourism has developed a programme (*Casate Conmigo*, Get Married With Me initiative) to promote weddings in the state's country houses. However, this programme could benefit from a clearer strategy to spread positive outcomes across the territory. A better strategy to exploit the state's natural assets while involving local communities and business in the organisation and provision of local products and services to weddings is needed. The state also intends to promote medical tourism, but currently, there is no clear strategy in place. The state should take into account the experience and examples of best practices by other Mexican states in niche tourism markets (Box 3.10). These strategies can be implemented through the creation of a touristic territorial plan in municipalities with touristic vocation, which currently does not exist.

- Another way to strengthen niche tourism in Hidalgo can be through the development of tourism in Hidalgo's former mining areas around a strong brand and by investing in infrastructure. The Louvre-Lens case in France is a good example of this. In 2012 the Louvre opened a branch of its museum in Lens (a former mining area). The French State granted the use of the renowned Louvre brand to pave the way for Lens to become a new cultural destination. The establishment of the museum has been a concerted effort of public authorities across different government levels. The strategy consisted of accompanying local small- and medium-sized enterprises (SMEs) in the transition, and building capacity in terms of knowledge and skills. The creation of a strong value proposition with a long-term view was accompanied by a strategy to assist local SMEs in the transition.

Box 3.9. Water parks: Examples of community-based tourism business

The Tephe water park is located 1 hour by car north of Pachuca. It is located in an *ejido*'s land owned by 500 families whose members work on different activities in the park. The park has a modern hotel, pools with natural waterfalls and artificial waves, and a conference centre.

During the day the park can have up to 500 workers, all members from the owner families, conducting diverse activities from maintenance, security, cooking to recreation. This park benefits in total around 2 000 people.

As a payment, families receive a monthly income, health security and a monthly basket of basic goods such as food and cleaning products. The company has also a programme of scholarship for children of their families. The children's school performance is monitored by the company who can decide then who will receive further support for high-level education.

Families are divided by neighbourhoods which choose one member to represent them within the management council of the company. The council is composed of 44 members who look after the day-to-day business of the water park and take financial and administrative decisions. They have also implemented a stabilisation fund system that allows the families to receive a monthly income in low tourist season. All the expansion of the aquatic complex has been done with own cash flow or private loans for big investments such as the hotel.

The Geiser water park is another example of a community-based tourism project in Hidalgo. It is located in the *ejido* of Uxdejhe, a rural community of 800 people in the municipality of Tecozautla. This land was originally used for agricultural purposes for own subsistence, but the presence of the geiser triggered its recreational use. The community started to develop tourism around the water from the end of the 1990s and currently the park has a hotel with more than 650 rooms. During weekdays, an average of 150 people visit the park and this number can reach 2 500 people at weekends, most of them coming from Hidalgo and surrounding states like Queretaro and Mexico.

Source: Government of Hidalgo (2017[11]), *Answers to OECD Questionaire for the Hidalgo Territorial Review*; Toscana, A. (2017[51]), *El Géiser Water Park: A Community-based Tourism Experience in Mexico*, http://dx.doi.org/10.15446/rcdg.v26n1.59189.

Box 3.10. Medical Tourism in Baja California and clusters in Mexico

The Medical, Dental and Hospital Cluster of Baja California was established in 2011. Prior to the global economic crisis, Baja California welcomed around 1 million patients each year, but this had dropped to 350 000 by 2010. Two factors had supported the development of medical tourism in Baja California up to this point: the proximity of a large market of consumers in Canada and the United States attracted by the availability of high-quality and cost-competitive healthcare; and the region's reputation from manufacturing high-quality medical devices and medical technologies. This facilitated the emergence of a medical services industry for visitors, which in turn facilitated the emergence of an allied cluster of services in the hospitality and tourism sectors. However,

to get ahead in the medical tourism sector, providers have had to pool efforts, consolidate their operations, get certified, promote themselves as a group and earn the trust of their prospective customers. The Baja California Cluster enables the hospital services in the region to provide a comprehensive and diversified offer to meet the needs of medical tourists. It also optimises the ecosystem of complementary services such as lodging, food and entertainment among others.

By 2015, the number of medical tourists travelling to Baja California to receive medical treatment had risen to an estimated 800 000. Most medical tourists attend for minor procedures, so there is a greater chance they will extend their stay as a mini-vacation and visit local tourist attractions. Mexico is seeking to position itself as a leading provider of quality, safe and competitively priced medical services to visitors. Ten medical tourism clusters have now been identified for development in Mexico: Baja California, Sonora, Chihuahua, Nuevo León, Tamaulipas, Jalisco, Guanajuato, Puebla, Quintana Roo and Mexico City. Actions include strengthening the medical tourism service chain, holding regional meetings to raise awareness of the importance and potential, encouraging certification and accreditation of services and products, and implementation of Distintivo H and Punto Limpo hygiene certifications, and attracting investment and encouraging financing through the development banks, as well as actively promoting Mexico as a medical tourism destination. Medical tourism revenues in Mexico were estimated in excess of USD 3.1 billion in 2014.

Source: OECD (2017[50]), *Tourism Policy Review of Mexico*, http://dx.doi.org/10.1787/9789264266575-en.

- **Enhance the professionalisation of the sector**. To date, despite a large number of hotels in Hidalgo, only a handful have staff who speak fluent English. Because SMEs represent the largest number of companies active in the service sector, such as tourism, and generate most of the employment (Chapter 2), specific attention should be put on the training of workers in those businesses as a means to strengthen the value chain of this sector.

- **Strengthen the tourism observatory**. Elaboration and use of tourism-related data are at the core of modernising tourism. Hidalgo has set the goal of creating a tourism observatory that can monitor tourism-related activities in the state and define strategic projects based on existing demand niche markets. This is an important initiative that, if well implemented, can systematise the available information on the characteristics of visitors, their travel and consumption patterns, their expectations and their degree of satisfaction with different aspects of their travels. As recommended in a former OECD study on tourism in Mexico, this information type of initiative can be enhanced by the elaboration of a visitor survey and in-depth market research to analyse Hidalgo's competitive position in tourism (OECD, 2017[50]).

- **Advertise the security environment as one of the comparative advantages of the state within Mexico**. Security concerns are important for tourists around the world. Hidalgo benefits from low levels of crime relative to other states in the country (Chapter 1). The state should benefit from this particular position to attract tourists. Positioning as security and environmentally friendly state for tourism within national and international information platforms could represent a trigger for added value in the state.

In terms of financing, the state can foster the expansion of credit for tourism investment projects through the development banks. Hidalgo is the 3rd state that receives the most funding for tourism-related projects from Bancomext (7%), just behind Quintana Roo (22%) and Sonora (14%). This bank has supported different states with working capital and acquisition of fixed assets for enterprises linked to tourism; hotel acquisition, expansion, remodelling, sustainable hotel improvements (technological, environmental, energy saving, fuel and water); and medical tourism, including construction and equipment of hospitals and clinics (OECD, 2017[50]). Apart from financing traditional working capital needs, Bancomext can be used as the implementing partner for innovative pilot programmes. It has financed sustainable solar water heating in tourism hotels in Yucatan, Campeche and Quintana Roo. Hidalgo can then canalise the funding towards sustainable and strategic tourism projects with an integrated policy approach to leverage on other sectors.

Adopting a territorial approach to tourism policy development

Hidalgo's policy on tourism lacks an integrated approach with other key sectors relevant to tourism such as environment, education and agriculture. Hidalgo would benefit from developing this integrated territorial framework and work agenda that would set a long-term vision for the sector ensuring the participation of different state agencies, both in programming and budgeting. A territorial development approach to tourism policy would help better exploit the diverse yet complementary wealth of existing tourist attractions.

The state government should develop a strategy whereby tourism is a key pillar of the economic development of the municipalities. This would result in:

- Designing and implementing territorial development projects based on tourism potential and characteristics presented at the local level.

- Developing local projects and strategies with the participation of other relevant state secretaries (Agriculture, Social Protection, Education, etc.) to create the necessary conditions for economic and social development as well as to ensure environmental conservation.

- Bringing municipalities together to provide diversified yet complementary tourism attractions

- Setting a clear vision for the sector. This can be done by developing a territorial brand of the state.

The case of ecotourism and agro-tourism is a good example to illustrate this approach. These niche markets can benefit from policy complementarities between policies and municipalities by boosting environmental conservation, sustainable agriculture and rural tourism. In that sense, tourism can also raise awareness of cultural and environmental values and help finance the protection and management of protected areas and biological diversity (OECD, 2017[52]). For example, Hidalgo can take further advantage of national programmes (SEMARNAT's support on certifications of ecotourism centres and tourism-related businesses) and state programmes of environmental conservation to expand ecotourism in the state. Since many low-density municipalities in the north of the state are rich in natural resources and agricultural land, and enjoy low levels of insecurity, Hidalgo can develop this strategy for the northern part of the state. It can create, for example, a package of ecological routes through different municipalities, following the example of European Cultural Routes or Sierra Mágica Routes Programme in the state of Puebla (OECD, 2017[50]).

Another field for complementarities is the innovation and promotion of new tourism products. Given the increasing competition to attract tourists among Mexican states, the development of new ideas in non-mainstream tourism products should attract new income for the state. Promoting new ideas in the sector should involve support to entrepreneurs and SMEs. This can mean placing the tourism sector as a platform to foster new entrepreneurial ideas that can enhance other economic activities. It implies for Hidalgo to expand entrepreneurship programmes to tourism business, by aligning the innovation policy with this sector (Box 3.11).

Box 3.11. Fostering entrepreneurship and innovation in Portugal

Destinations are facing an increasingly competitive environment. There are three key ingredients for remaining successful in this industry: creativity, a wise use of technology and resilience. In this context, Turismo de Portugal has defined a framework to support travel start-ups, fostering entrepreneurship and innovation in the tourism sector and creating a dynamic entrepreneurship ecosystem in the country. This framework includes targets to develop a more innovative and entrepreneurial culture in the travel sector; create and actively support initiatives accelerating and nurturing start-ups that can impact tourism; support travel start-ups in the critical phase of market development by mobilising marketing resources specifically for their needs; provide adequate public funding and attract private investment to the new travel businesses emerging from this movement; attract knowledge to Portugal, fostering the travel ecosystem and making the country a reference Travel Start-up Hub. Within this framework, the Portuguese Tourism Board established several partnerships and initiatives focused on entrepreneurship and innovation, which have been able to enhance a very active entrepreneurial tourism ecosystem. This includes:

- Encouraging tourism entrepreneurs to participate in horizontal accelerator programmes, notably the Lisbon Challenge (www.lisbon-challenge.com), in partnership with i-Beta. From nearly 100 start-ups accelerated the past 2 years, about 30 are from the tourism sector.

- Creating a vertical acceleration programme dedicated to tourism, the Discoveries Travel and Tourism Start-up Accelerator (www.startupdiscoveries.com), in partnership with Fabrica de Startups.

- Targeting projects that use or contribute to open data, notably Smart Open Lisboa (www.smartopenlisboa.com), a partnership with Lisbon City Hall, Portugal Telecom, Cisco and Beta-i.

- Including dedicated entrepreneurship programmes in the syllabus of Turismo de Portugal's Hotel Schools with a specific programme – Tourism Creative Factory.

- Attracting national and international investors to support these initiatives, through the Lisbon Investment Summit and Tech Tour.

Source: OECD (2017[50]), *Tourism Policy Review of Mexico*, http://dx.doi.org/10.1787/9789264266575-en.

Developing a brand for the State of Hidalgo

Hidalgo should give special support to activities that can foster a local brand. It can help to better articulate the different efforts in the tourism sector with other policy areas and showcase local products. This brand should be based on the characteristics and the potential of the region. Currently, there is no brand name for the State of Hidalgo. The development of a brand name has been a successful initiative in other regions (Box 3.12).

Box 3.12. Territorial branding

Places have their own characteristics, products and people, i.e. economic, geographic and cultural attributes that can be identified as unique or special. Branding is a way to promote the uniqueness of places. A clearly identifiable brand is more beneficial than many different, segmented ones. Brand creation needs follow-up action to consolidate it. The literature has extensively noted that logos and slogans alone have little significance in fostering economic restructuring and social cohesion (Oliveira, 2015[53]). Places should follow up on actions that can transform the region, in order to realise the brand's potential. A brand reflects the work behind it; it does not create great places on its own.

The case of the brand Produit en Bretagne (Made in Brittany) in France shows how shared values and collective efforts to expand and solidify the brand can yield positive results (Donner, 2016[54]). The oldest regional food brand in Europe, Produit en Bretagne was created in 1986 to strengthen the solidarity and employment of the region. Since then, an association of producers was created, which today includes members of the service sector such as hotel, restaurants and cultural and creative sectors. The association facilitates the engagement of an array of stakeholders, who exercise quality controls over products and agree on the marketing strategy. The association successfully created a business incubator to support innovative projects too (Donner, 2016[54]).

This example also signals the importance of participatory territorial branding, i.e. of involving local stakeholders in brand development and consolidation. Promoting synergies and consensus among regional stakeholders has been identified as one of the key elements in keeping a brand alive and well in the long run.

The territorial marketing strategy adopted in the Cinque Terre region of Italy, for instance, relied on participatory methods. Local Agenda 21 fora were used to foster the commitment of the local and entrepreneurial actors in agricultural and tourism activities related to the promotion of the brand (Lorenzini, 2011[55]). In the long run, a long-lasting and legitimate brand depends largely on the engagement of local stakeholders.

Sources: Donner, M. (2016[54]), *Understanding Place Brands as Collective and Territorial Development Processes*, http://dx.doi.org/10.18174/379598; Lorenzini, E. (2011[55]), *Territory Branding as a Strategy for Rural Development: Experiences from Italy*, http://hdl.handle.net/10419/120139 (accessed 6 November 2017); Oliveira, E. (2015[53]), "Place branding in strategic spatial planning: A content analysis of development plans, strategic initiatives and policy documents for Portugal 2014-2020", https://doi.org/10.1108/JPMD-12-2014-0031.

The only strategy in the state that makes use of something similar as a brand is the certification label "*Con sabor a Hidalgo*" to promote gastronomic tourism. The label is issued to those municipalities considered to offer special typical dishes. The branding strategy can be a very powerful tool for the tourism sector but can also have important ramifications to attract economic activity and population to the region. This policy, coupled with the development of more professional and market-oriented traditional sectors (particularly in textile, tourism and agriculture) as well as the implementation of the ICT across the different municipalities of the state should allow gaining markets and increased margins. Hidalgo can also benefit from the example of the GREAT campaign in the UK. Launched in 2012, the country aimed to capitalise on the global attention from the London Olympics and created a national brand campaign "GREAT" with the strategic goal of inspiring the world to think differently about the country (OECD, 2017[50]).

Natural assets and environmental amenities

The sustainability of natural resources is important not only for well-being and economic activity (e.g. tourism or agriculture) but also for the whole attractiveness of the state. Natural resources are a central asset for the State of Hidalgo. Despite its relatively small land surface within Mexico, Hidalgo has a diversified endowment of environmental assets ranging from a jungle, a chain of mountains, forests and a large water endowment. Hidalgo is the fifth state with the biggest diversity of mammals and plants in Mexico. It has 3 national parks (out of 67 in Mexico), 2 located in the south close to Pachuca and Tula and 1 in the north, and 44 natural protected areas (7% of the state's territory).

However, population growth and urban expansion in the south of the state are threatening this natural capital. While air pollution is not a major problem compared to other states in the central area of Mexico, its quality could be improved (see Chapter 1). Overall, four critical problems underline the environmental challenge in the state:

- Low volume of treated wastewater and overexploitation of aquifers. More than 62% of the residual water in Hidalgo requires a new treatment infrastructure. In addition, the state has a deficit of water (22 hm^3), which is expected to increase by more than 10 times in 2030 due to an expanding water demand against its supply (Government of Hidalgo, 2016[29]).

- Lack of control and monitoring of protected natural areas. Hidalgo is the state with higher risks on forest fires in Mexico and ranks fifth in the loss of largest forests, due to agricultural and farming activities (Secretary of Environment and Natural Resources, 2017[40]).

- Inadequate management of solid waste. The state recycles only 2.4% of daily waste. Overall, there are only 5 regional landfill sites and 14 municipal sites that provide this service to 32 municipalities out of the 84 meaning that only 50% of the solid waste is managed properly. The solid waste from the reaming 52 municipalities goes to the 48 open-air dump sites that normally do not comply with environmental regulations (Secretary of Environment and Natural Resources, 2017[40]).

- Low quality and access to water. Households in Hidalgo have the fifth lowest level of access to tap water in the country (Figure 3.13). The state provides 61% of households with tap water, below the country average level (77%). Overall, 12% of the state population lacks access to drinkable water (90% of this

proportion is located in rural areas). The federal government has already projected an increase in this share to 35% by 2030 if nothing is done.

Alongside this, the state has shown a low capacity and allocation of resources to address the environmental challenges. Hidalgo is among the top 10 states with the lowest index in environmental management and conservation in Mexico (Secretary of Environment and Natural Resources, 2017[40]) and ranks among the fifth states with the lowest allocation of public resources for environmental issues.

Figure 3.13. Households with access to tap water per state, 2015

Source: INEGI (2015[32]), *Inter -
census Survey 2015* http://www.beta.inegi.org.mx/proyectos/enchogares/especiales/intercensal/?init=1.
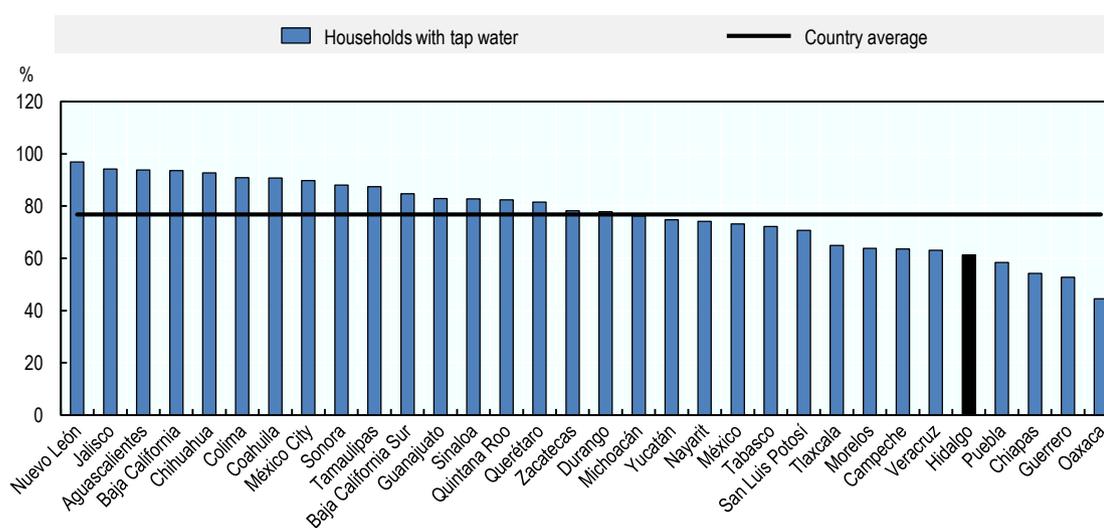
The current government has developed a strategy to tackle the risks for its natural resources. Hidalgo's environmental strategy focuses on seven objectives (Table 3.11). Overall, they aim to develop ecological territorial planning across the entire state, foster environmental education, improve and preserve water sources and monitor urban waste and air quality. The Secretary of Environment and Natural Resources (SEMARNATH) is responsible for developing and enforcing the environmental policy in the state.

The sectorial programme of SEMRNATH is aligned with the state objectives and with the main environmental laws for the state:

- The Law of Ecological Balance and Environmental Protection of the State of Hidalgo (LEEPAEH) and regulations (see section on land use).

- Four specific laws: The Law of Sustainable Forestry Development, the Law of Management and Prevention of Waste), the Law for Environmental Protection and the Law for Mitigation and Adaptation for Climate Change.

Table 3.11. Hidalgo's environmental conservation strategy (selected strategies)

Objectives	Strategies
Comprehensive and sustainable territorial planning	- Diagnosis of natural assets at municipal level - Map municipal environmental management, with a large focus on waste - Plan and forecast environmental challenges - Develop the up-to-date Plan on Environmental Territorial Planning
Equity in services and infrastructure	- Update the number of business units in the state and verify their environmental procedures - Deliver technical assistance on environmental management
Education and environmental culture	- Conference and workshops on environmental management in schools and universities.
Sustainable infrastructure	- Improve urban waste management - Identify priority municipalities to develop waste management infrastructure - Technical assistance to municipalities to develop the infrastructure on waste management.
Sustainable development	- Improve and expand infrastructure on renewable energy - Focus on municipalities without access to electric energy
Air quality	- Monitor air pollution, issue alerts and determine actions to be taken by private sector and communities - Modernise the tools to monitor air pollution
Natural capital preservation	- Ensure environmental balance in forests through conservation and restitution - Ensure conservation of flora and fauna - Preserve and expand natural protected areas

Source: Secretary on Environment and Natural Resources (2017[40]), *Sectoral Plan of Environment and Natural Resources 2017-22*.

Among the different strategies to attain the state's environmental objectives, the sectorial programme of SEMARNATH focuses and follows up on nine strategic policies:

- Create and implement Ecological Land Management Plans for the state and municipal level. The main goal in this matter is to finish the update of the Ecological Land Management Plan for the state (expected for 2019) and ensure the whole territory is covered with updated plans.

- Increase the number of economic units subject to regulation and authorisation in terms of environmental standards. In 2016, 28.92% economic units have complied with the mandatory environmental regulations and the target for 2019 is to increase compliance with 35.7% of economic units.

- Preservation of natural heritage areas. It is expected that 10.89% of protected natural areas are considered within a conservation scheme. For example, establish six new units for the preservation of wildlife; reduce response time for forest fires, among others.

- Create and implement a state strategy for biodiversity. By 2019 the government expects to have completed the research on state biodiversity and published the strategy for preservation.

- Increase the percentage of the population with access to environmental education and culture. The indicator measures the number of educational institutions with environmental programmes, the target for 2019 being 15%.

- Increase the percentage of solid waste subject to sustainable management. The strategy is part of the State Program for the Prevention and Integral Management of Solid Waste that seeks to implement policies for its sustainable management. The indicator measures how much solid waste has been harnessed for recycling, as compost materials or into clean energies. The goal for 2019 is to implement projects for solid waste re-utilisation for alternative sources of energy.

- Increase units of sustainable technology for the generation of renewable energy in the municipalities.

- Track the percentage of vehicles that have conducted ecological control. In 2016, 27.8% of vehicles conducted the ecological control and the target for 2019 is that 35% of them completes it.

- Increase environmental tax collection. For instance, by establishing a Green Fund, simplifying collection mechanisms, aligning regulations and laws to increase collection. The indicator measures the progress on tax collection, which in 2016 was negative (-15%) and has a target of 45% increase for 2019.

Renewable energy policy stands out from the list of key policy areas. There are two types of projects being implemented:

- Renewable energy for rural municipalities: the government has installed 533 autonomous photovoltaic systems to bring electricity to rural areas that do not receive it directly from the Federal Commission of Electricity (CFE). There were further plans for expansion of this policy in 2017. In addition, 130 biodigestors have been installed with the purpose of generating energy for cooking in rural municipalities.

- Public-private partnerships for energy supply: Intermunicipal project for the generation of electric energy from solid waste in Tizayuca. There is a plan to reproduce this pioneer project in two more locations.

In terms of climate change, SEMARNATH's research has determined that Hidalgo's territory is located in a zone of significant vulnerability to climate change with a potential increase of 2°C in temperature and 5% decrease in rainfall water by 2020.

To face this challenge, Hidalgo has a State Program for Action on Climate Change 2013 (PEACCH) aligned with the General Law for Climate Change and the National Strategy for Climate Change. The objective of PEACCH is to design and integrate the technical tools to measure climate variability; identify the main greenhouse gases emission sources; predict future climate scenarios and vulnerabilities and propose mitigation policies. According to the PEACCH findings, most of the emissions in the state come from energy generation; however, wastewater and solid waste contribute significantly to greenhouse gas emissions. Wastewater comes from three sources, municipal sewage water, industrial sewage water and sewage water from Mexico City Metropolitan Area that flows into the Endhó and Requena dams. Hidalgo has a lower rate of treated sewage water than the national average in 2014.

As for international co-operation, one of the few co-operation programmes on environmental conservation in Hidalgo is the "ProTierras" programme. Hidalgo together with Oaxaca and Zacatecas is currently participating in a programme with FAO called "ProTierras". The objective is to promote the sustainable use of land, reduce land degradation and to strengthen local institutions and producers.

Although the environmental strategy acknowledges most of the critical bottlenecks, the effective implementation of laws and environmental guidelines remains low (e.g. there is no clear mechanism on the construction of the green fund and green investment). Furthermore, part of the outcome of the strategies relies on the update of the Ecological Land Management Plans. Such an update can expose new environmental situations for the state, with different areas in risk or new environmental needs. Clear long-term goals should also be included such as reduction of air pollution level. The State of Hidalgo should hence ensure that SEMARNATH has the institutional capacity to finish the update in time and process the results.

The State of Hidalgo can also benefit from further attention to some specific challenges:

Increase complementarities with other state secretaries and sectorial programmes. Strategic programmes such as environmental control on vehicles, increase technology for renewable energy or increase environmental tax collection should be aligned with policies from other state Secretaries (SEMOT, SOPOT or SEDECO). For example, the SEMOT's strategy on encouraging sustainable motorised mobility should be aligned with the SEMARNATH's goal of improving air quality. Hidalgo should establish co-ordination mechanism for co-operation among secretaries.

In terms of waste management, the State of Hidalgo should ensure that governance arrangements that help mobilise waste infrastructure funds and allocate financial resources in an efficient, transparent and timely manner. The state has low recycling rates and weak waste management. The SEMARNAT has acknowledged this issue and is conducting a process to determine the priority areas and the municipalities in order to start supporting the adequate infrastructure for processing waste. However, the process is still in its initial stage and the limited economic resources jeopardise a rapid implementation of such an infrastructure.

Hidalgo should promote better co-ordination with other states and among municipalities with regards to water resources. The pressure of water resources in the State of Hidalgo originates from different sectors and states. Most of the water extracted from the aquifers in Hidalgo is destined for agriculture (87%) and public use (7%). The operative region of Tula has particularly high pressure on water resources with already higher water demand than resource availability. This demand comes not only from Hidalgo but also from the metropolitan area of Valle de Mexico (ZMVM). Overall, out all the aquifers providing water to the ZMVM, the Cuautitlán-Pachuca aquifer is the one under the highest pressure (Fondo Metropolitano del Valle de México, 2011[13]).

Water contamination is another important environmental challenge in the state. To solve this issue, the federal government has supported the construction in Atotonilco Hidalgo, the largest treatment plant of residual water in Mexico, which will also treat the residual water produced in Mexico City. While this project will help reduce water contamination, it needs to be accompanied by education campaigns and monitoring of private companies. Strengthening the Secretary of Environment to accomplish such tasks is essential to make the most of this project.

OECD has developed the principles of water governance, which can guide Hidalgo in the aim to preserve and improve the quality of water resources (Box 3.13). Specific actions for the state should be:

- Enhance the co-ordination with surrounding states. Since, the metropolitan area of Valle de Mexico creates an important pressure on Hidalgo's groundwater recharge (especially on the Cuautitlán-Pachuca aquifer), a co-operation between both states is crucial to avoid overexploitation.

- Increase quality information on the level of resources and water-related infrastructure. The hydrologic infrastructure on agriculture lacks information on the length of water canals and irrigation networks.

- Involvement of local communities and citizens. Many environmental problems come from a lack of consultation with citizens and local business. Given the weak enforcement of environmental guidelines by other state secretaries, civil society engagement is crucial to oversee natural capital conservation. They are direct witnesses of environmental deterioration and can be effective for Hidalgo to strengthen the ties between civil society and government representatives in natural resources' conservation.

- Forest conservation does not rank very high in the priorities of the SEMARNAT, despite being a support for the local economy and the environment, especially in the northern part of the state. Hidalgo is the state with the highest risks on forest fires among Mexican states and ranks fifth with the largest forest loss due to agricultural and farming activities (Secretary of Environment and Natural Resources, 2017[40]). Northern municipalities have stressed the high level of illegal appropriation of wood in forests. To solve this, Hidalgo should further control illegal logging and improve its plans for fires. In particular, it needs a comprehensive development of an inventory of forests and promotes the involvement of local communities in its conservation. It can be complemented with a strategy to link the forest preservation with other sectors, such as tourism.

- On climate change, Hidalgo should consider international partnerships in a strategic manner, in alignment with the federal government. This can entail in the first stage, for instance, the comprehensive diagnostic of the main challenges regarding climate change mitigation across the territory. Studies on the forestry potential to reduce CO_2 emission and create environmental bonds or risk environmental assessment for human settlements can be conducted in partnership with international experts and with the support of state level or other secretaries involved. The example of Baja California's co-operation with USAID (on a systematic methodology for cost-effective and renewable energy) could guide Hidalgo's efforts in environmental co-operation with other organisations.

- To conclude, Hidalgo's capacity to protect and better manage its natural assets relies on an efficient co-ordination among states, secretaries and municipal governments and complementarities with strategic programs of other sectors (i.e. ecotourism or renewable energy). Investment on environmental infrastructure (solid and water waste management) and international and federal partnerships to evaluate and mitigate the risk of climate change and other environmental risks are needed in the state.

Box 3.13. Principles on water governance

The *OECD Water Governance Principles* provide the 12 must-do elements for governments to design and implement effective, efficient, and inclusive water policies:

Principle 1. Clearly allocate and distinguish roles and responsibilities for water policymaking, policy implementation, operational management and regulation, and foster co-ordination across these responsible authorities.

Principle 2. Manage water at the appropriate scale(s) within integrated basin governance systems to reflect local conditions, and foster co-ordination between the different scales.

Principle 3. Encourage policy coherence through effective cross-sectoral co-ordination, especially between policies for water and the environment, health, energy, agriculture, industry, spatial planning and land use.

Principle 4. Adapt the level of capacity of responsible authorities to the complexity of water challenges to be met, and to the set of competencies required to carry out their duties.

Principle 5. Produce, update and share timely, consistent, comparable and policy-relevant water and water-related data and information, and use it to guide, assess and improve water policy.

Principle 6. Ensure that governance arrangements help mobilise water finance and allocate financial resources in an efficient, transparent and timely manner.

Principle 7. Ensure that sound water management regulatory frameworks are effectively implemented and enforced in pursuit of the public interest.

Principle 8. Promote the adoption and implementation of innovative water governance practices across responsible authorities, levels of government and relevant stakeholders.

Principle 9. Mainstream integrity and transparency practices across water policies, water institutions and water governance frameworks for greater accountability and trust in decision-making.

Principle 10. Promote stakeholder engagement for informed and outcome-oriented contributions to water policy design and implementation.

Principle 11. Encourage water governance frameworks that help manage trade-offs across water users, rural and urban areas, and generations.

Principle 12. Promote regular monitoring and evaluation of water policy and governance where appropriate, share the results with the public and make adjustments when needed.

Source: ESEC (2011[56]), *About the ESEC*, (Accessed July 2018), www.lecese.fr/en.

Box 3.14. Co-operation with international organisations on climate change

Water/Wastewater Utility Greenhouse Gas Reduction and Energy Management Program, USAID-Baja California

This is an initiative with the state of Baja California, through the Global Development Alliance, USAID and the Border Environment Cooperation Commission (BECC) fund, to provide comprehensive and systematic methodology for identifying and implementing cost-effective energy conservation and renewable energy projects at municipal utility sites, focusing particularly on water and wastewater municipal sites.

The programme started in 2013 and is ongoing. It had a total investment of USD 3.7 million, of which 40% came from the United States government and the rest from four other resource partners (BECC, Baja California's government, Greenhub Advisors and MDB Consulting Engineers).

The Mexico Border States Climate Change Program, The Center for Climate Strategies

The Center for Climate Strategies (CCS) has provided assistance to each of the six US-Mexico Border States with comprehensive climate change action planning. Since 2008, CCS has operated in partnership with the Border Environment Cooperation Commission (BECC) – also a partner for the USAID-Baja California project – and each of the states (Baja California, Chihuahua, Coahuila, Nuevo León, Sonora and Tamaulipas) in co-operation with the Mexico Institute for National Ecology and Climate Change (INECC) and the US Environmental Protection Agency (EPA).

The programme includes the development by CCS of greenhouse gas emissions inventories and forecasts (all sources and sinks) in each of the states, through a regionally consistent methodology that is applied on a custom basis to each jurisdiction. In addition, CCS and BECC have supported climate mitigation planning with each of the states. The research and mapping for the greenhouse gas emissions in the State Plan for Climate Change Action were funded by this initiative.

Sources: USAID (2017[56]), *Water/Wastewater Utility Greenhouse gas reduction and Energy Management program*, https://partnerships.usaid.gov/partnership/municipal-waterwastewater-utility-greenhouse-gas-reduction-and-energy-management-program; CCS (2018[57]), *Mexico Border States Climate Change Program*, The Center for Climate Strategies, Washington DC, http://www.climatestrategies.us/international_actions/international_actions/view/1.

Notes

[1] The states selected as a comparison are those sharing a border with the state of Mexico and Mexico city, both also included: Morelos, Tlaxcala, Queretaro, Puebla, Guerrero, Michoacan.

[2] Urban population in Mexico is classified as the population living in urban areas. The National Institute of Statistics and Geography (INEGI) classifies urban areas as the localities with more than 2 500 inhabitants, while rural areas are the ones with less than 2 500 inhabitants.

[3] With the definition of Mexican metropolitan zones in 2010, Tizayuca was included in the Valle de Mexico metropolitan zone because of the functional integration of the functional urban core (for more details see SEDESOL-CONAPO-INEGI (SEDESOL-CONAPO-INEGI, 2015[12])).

[4] Pachuca is the only metropolitan area of Hidalgo (it meets the minimum 500 000 inhabitants threshold), while Tulancingo and Tula are classified as medium and small urban areas.

[5] Ozone at ground level is one of the major constituents of photochemical smog. It is formed by the reaction with sunlight (photochemical reaction) of pollutants such as nitrogen oxides (NOx) from vehicle and industry emissions and volatile organic compounds (VOCs) emitted by vehicles, solvents and industry.

[6] According to CONEVAL, a person in extreme poverty does not meet three or more indicators, of six possible, within the Social Deprivation Index and, moreover, is below the minimum welfare line. People in this situation have such a low income that, even if they dedicate it completely to the acquisition of food, they could not acquire the necessary nutrients to live a healthy life.

[7] CONEVAL has different variables of income and social depravation. For income deprivation, this chapter uses the variable of *share of population with an income below the line of welfare* (minimum income to access the basic food basket and cover basic goods and services). For social deprivation, it uses the variable *share of population with three or more social depravations* (among the pool of six indicators of social deprivation).

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Annex 3.A. The 17 operative regions in Hidalgo

Annex Table 3.A.1. The 17 operative regions in Hidalgo

Regin I - Pachuca	Regin X Huejutla
Epazoyucan	Atlapexco
Mineral del Monte	Huautla
Pachuca de Soto	Huejutla de Reyes
Mineral de la Reforma	Jaltocn
San Agustn Tlaxiaca	San Felipe Orizatln
	Xochiatipn
	Yahualica
Regin II Tulancingo	**Regin XI Apan**
Cuautepec de Hinojosa	Almoloya
Santiago Tulantepec	Apan
Singuilucan	Emiliano Zapata
Tulancingo de Bravo	Tepeapulco
	Tlanalapa
Regin III Tula	**Regin XII Tizayuca**
Tepetitln	Villa de Tezontepec
Tezontepec de Aldama	Tizayuca
Tlahuelilpan	Tolcayuca
Tula de Allende	Zapotln de Jurez
	Zempoala
Regin IV Huichapan	**Regin XIII Otom Tepehua**
Chapantongo	Acaxochitln
Huichapan	Agua Blanca de Iturbide
Nopala de Villagrn	Huehuetla
Tecozautla	Metepec
	San Bartolo Tutotepec
	Tenango de Doria
Regin V Zimapn	**Regin XIV Tepeji**
Nicols Flores	Ajacuba
Pacula	Atitalaquia
Tasquillo	Atotonilco de Tula
Zimapn	Tepeji del Ro de Ocampo
	Tetepango
	Tlaxcoapan

Regin VI Ixmiquilpan	Regin XV Atotonilco
Alfajayucan	Acatln
Cardonal	Atotonilco el Grande
Chilcuautla	Huasca de Ocampo
Ixmiquilpan	Mineral del Chico
	Omitln de Jurez
Regin VII Actopan	**Regin XVI Jacala**
Actopan	Chapulhuacn
El Arenal	Jacala de Ledezma
Francisco I. Madero	La misin
Mixquiahuala de Jurez	Pisaflores
Progreso de Obregn	
San Salvador	
Santiago de Anaya	
Regin VIII Metztitln	**Regin XVII Zacualtipn**
Eloxochitln	Tianguistengo
Jurez Hidalgo	Xochicoatln
San Agustn Metzquititln	Zacualtipn de ngeles
Metztitln	
Tlahuiltepa	
Regin IX Molango	
Calnali	
Huazalingo	
Lolotla	
Molango de Escamilla	
Tepehuacn de Guerrero	
Tlanchinol	

Source: Government of Hidalgo (2017[1]), *Answers to OECD Questionnaire for the Hidalgo Territorial Review*.

Chapter 4. Strengthening Hidalgo's governance for an effective policy outcome

This chapter provides a diagnosis of the main multi-level governance mechanisms and the regulatory policy of Hidalgo, as well as an analysis of subnational governments' finance of the state and its municipalities. The chapter has four sections. The first presents an overview of the national governance structure and the distribution of competencies between levels of government. The second focuses on the fiscal revenues and expenditures of the State of Hidalgo and its municipalities. The third discusses the State Development Plan and its governance mechanisms. The fourth analyses the regulatory improvement policy and the actions to enhance the business environment in Hidalgo.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank.

Key findings

1. Despite advancing on decentralisation in Mexico, states are still limited in their financial portfolio. Competencies and responsibilities are not clearly defined and there is an overlap between the levels of government. There is a misalignment between responsibilities allocated to subnational governments and the resources and capabilities available to them, with the federal government still controlling large spending areas.

2. Within the Mexican context, Hidalgo stands in a relatively weak position. The state has the fourth-lowest level of own revenues collection in Mexico and its dependency on federal transfers (90% of the state income) is above the national average. It has created a lack of accountability and low incentives for an effective and prudent fiscal policy.

3. Most of the transfers to Hidalgo stem from earmarked funds (62%), limiting the autonomy of the state and municipal governments, to adapt policies to local needs and circumstances. Furthermore, the non-earmarked transfers are highly volatile which limits subnational medium-to-long term planning.

4. Hidalgo has significant space to increase the fiscal revenues at the state and municipal level. The share of the state tax collection (2.8%) is below the country's average (4.1%), with a lower collection of payroll and property taxes. High informality rates, low institutional capacity at local level coupled with a small tax base and relatively low levels of tax rates and fees hamper the own fiscal revenues in the state.

5. Property taxes are especially low at the municipal level. During 2012-16, the share of the land use tax in the municipal revenue (3%) was half the average in Mexican municipalities (6%). It is explained by a low enforcement in the update of cadastres and urban development plans and the low efficacy of tax collection.

6. Hidalgo is the state with the sixth lowest level of public investment per capita in Mexico and the existing investments do not target the strategic sectors for the state. At the state level there is no investment in productive projects and at the local level, most of it is allocated to security (96%), with sectors like agriculture or tourism receiving limited resources.

7. Hidalgo has made an important effort in elaborating a comprehensive State Development Plan closely linked to the Sustainable Development Goals (SDGs) objectives. Nonetheless, the plan could be further improved:

- State objectives are currently too broadly defined, lack of prioritisation and differentiation between short, medium and long term. This can lead to weaker monitoring and refocusing of public policies.

- The strategic pillars bear cross-cutting issues without promoting sharing responsibilities.

- Although the programmes are by nature multi-year, the provision of funds does not contemplate a multi-year budget.

8. Monitoring and evaluation of the State Development Plan (SDP) are made through a mechanism of indicator performance that present some challenges:

- The indicators tend to duplicate across secretaries and there is no real sense of transversality and complementarity. It hampers the scope for vertical or horizontal co-ordination and reduces clarity over the attribution of responsibilities to each secretary and level of government

- Priority indicators reflect outputs rather than outcomes. There is no clear differentiation between input, output and outcome indicators.

- Indicators lack a clear criterion on fulfilling objectives based on a benchmark with comparable regions, past objectives or a baseline value.

9. Hidalgo has enough fora and institutions to enhance vertical and horizontal co-ordination within and across the state, although there is no institutional mechanism to incentivise the co-ordination. The Regulatory Improvement Law and the performance indicators mechanism can be used as a tool for better co-ordination.

10. The understaffing, retention and motivation of public servants is a challenge in the state. Hidalgo has developed a policy of lean management, by reducing staff in the search for modernisation. However, it needs to be accompanied by strategies to change and make more efficient the operation of the public administration.

11. The State of Hidalgo is advancing on citizen participation and initiatives to promote public finance accountability. The state has set citizen participation as one of the strategic objectives of the State Development Plan. The Citizens Advisory Council of the State of Hidalgo (CCCEH) is enhancing the government-citizen dialogue.

12. The State of Hidalgo developed a Law on Regulatory Improvement that seeks to improve regulatory quality and is consistent with many of the practices adopted by OECD countries. However, it is still missing the elaboration of the subordinating regulation – *El Reglamento –,* the instruments to analyse draft regulation (RIA) and more clarity on the setup of a State Commission on Regulatory Improvement.

13. The main efforts of Hidalgo on regulatory improvement focus on administrative simplification, with a 100-priority process to be simplified and digitalised. However, simplification requires a formal strategy, which should be based on reducing administrative burdens.

14. The government of Hidalgo has a plan to digitalise the processes on a one-single-stop shop (Web portal). However, there is no clear classification of the processes and their link with specific economic or citizens activities.

15. Institutional co-ordination between ministries and agencies with the current office in charge of regulatory improvement is weak. A relevant practice seems to be the co-ordination with the judiciary power, which must comply with the law on regulatory improvement. It can serve as a good example to be generalised across agencies.

Introduction

Improving the territorial development in a state or municipality depends largely on the institutions, frameworks and processes shaping the territory's public governance structure. The strength of this structure, how it is managed and its adaptability to changing circumstances are prerequisites to meet state objectives.

This review has stressed the efforts the State of Hidalgo is making to attract investment and increase productivity while attaining inclusive and sustainable growth. The state can unleash economic opportunities based on its favourable geographic location (closeness to the largest internal market), its well-developed infrastructure in the south coupled with a high endowment of natural resources and safety environment. However, the state still requires a clearer policy strategy to match large investment with local capacities and promote policy complementarities to unleash untapped opportunities across the territory. To allow these policies and strategies to be well conceived, applied and financed, Hidalgo needs the right governance and regulatory setting.

This chapter examines the governance and regulatory tools in the State of Hidalgo and provides recommendations to spur the effectiveness, efficiency and inclusiveness of government actions. It argues for the need for greater attention to fiscal management and co-ordination at different levels of government, the improvement of planning mechanisms and the importance of an efficient regulatory policy with stronger accountability instruments.

The first section begins with an overview of the national governance structure and the distribution of competencies between levels of government. It then examines the fiscal revenues and expenditures of Hidalgo and its municipalities. Next, it discusses the State Development Plan and its governance mechanisms and lastly, it analyses the regulatory improvement policy and actions to enhance the business environment.

The Mexican decentralisation context

Mexico is one of nine federal countries in the OECD.[1] It is a presidential state with three levels of government. The President of the Republic, elected for a six-year term, heads the executive branch. At the subnational level, the country is divided into 32 states and each one of them is composed of municipalities. There are approximately 2 457 municipalities in the country, 84 of which are in the State of Hidalgo. The country has experienced several phases of decentralisation, transferring significant competencies to subnational governments particularly in the delivery of education and health services (Box 4.1). Nonetheless, subnational governments have limited margins of manoeuvre because the central government takes most of the strategic decisions and because states and municipalities, due to fiscal imbalances, are strongly dependent on earmarked funds from the central government.

The constitution defines that the states are free, sovereign, autonomous and independent from one another. Mexican states have their own constitutions and can enact their own laws as long as they do not contradict the national constitution. The division of powers in the states is similar to that of the national level, with a governor that is elected for a six-year term and who is head of the executive branch. Each state, however, has its own electoral calendar. In most of the states (26), the governor election coincides with that of the federal level, while in Hidalgo it occurs 4 years later (the mandate of the current

governor is 2016-22). State governments also have their judiciary branch with their own civil and penal codes.

Box 4.1. Overview of Mexican decentralisation

The decentralisation process in Mexico is charged with two centuries of history and conflict. The 19th century saw strong opposition between pro-centralisation and decentralisation governments. In 1857, Mexico was definitively established as a federal government. Despite the constitution of a federal state, the fiscal agreements in the 1920s and 1930s, the hegemony at all levels of government of the Partido Revolucionario Institucional (PRI) and the import-substitution development model lead *de facto* to a highly-centralised political and fiscal model.

The movement towards decentralisation in Mexico was driven by a quest to reduce poverty and inequality and to improve public service provision representation and accountability (Giugale and Webb, 2000[1]). In Mexico, this transition took the form of three main reforms (Cabrera-Castellanos, 2008[1])(i) the creation of the Nacional System of Fiscal Co-ordination (*Sistema Nacional de Coordinación Fiscal*, SNCF) in 1980 which clarified the rules of fiscal transfers, centralised VAT collection and sought to avoid double or triple taxation; ii) the constitutional change in 1983, which decentralised functions to the states and municipalities while allowing local governments to have their own resources; and iii) the transfer of health and education services to the states between 1995 and 1998.

Source: Adapted from OECD (2017[1]), *OECD Territorial Review of Morelos, Mexico*, http://dx.doi.org/10.1787/9789264267817-en.

At the third level of government, municipalities are autonomous local governments, but they are governed by state constitution and legislation. A mayor heads the local government and is supported by the municipal council. In 2014, Mexico issued an electoral reform to allow re-election of mayors at the municipal level, if their mandate is not higher than three years. The re-election does not apply to Hidalgo since the term of its mayors is four years, unlike most states where there is a three-year term.

There is an overlap of responsibilities across levels of government in Mexico

Mexico is characterised by a complex system of overlapping competencies and spending responsibilities, particularly in terms of implementation and financing. Federal powers are extensive and sometimes overlap with the responsibilities of states and municipalities. The federal government is responsible for matters relevant to the whole country, such as macroeconomic policy, defence and research and development policy. The sectors for which the federal government is not the single main responsible tend to pose strong multi-level governance challenges since they require two or three inter-dependent levels of government working together.

States are responsible or co-responsible for the delivery of several public services. They are in charge of delivering education and healthcare, co-responsible, with the federal government and municipalities, for poverty alleviation and water management. Tourism, agriculture and industrial policies are also shared between the national level and the

states. While states have the primary responsibility for staffing and funding, they have little flexibility in the way money is spent, as most of the funding is earmarked for the payment of salaries (e.g. staff compensation absorbs over 90% of all education spending) (Caldera Sánchez, 2013[2]).

Municipal governments are responsible for local matters primarily. They are in charge of the implementation of social programmes and water distribution, and bear an important role in urban planning through the granting of construction permits, the update of cadastres and development of urban plans. They are also responsible for roads and school maintenance, garbage collection, public lighting, cemeteries, public parks and markets. Infrastructure and transportation are sectors that involve the three layers of government, with the central government mostly responsible for the financing and the subnational levels responsible for the maintenance. At the local level, healthcare and education are two of the most affected areas of overlap. Most of the spending of local governments in these sectors is allocated to staff expenditure, with a limited spending capacity on goods, services and investment.

The lack of clarity in the definition of spending responsibilities yields low incentives for subnational governments to be fully accountable for the public services' provision. This potentially results in an inefficient provision and poor quality of public service (Caldera Sánchez, 2013[2]).

The imbalance in Mexican fiscal system

Developing a system for local governments to assume both fiscal and political responsibilities is an ongoing challenge in Mexico. Subnational governments (states and municipalities) are responsible for an important share of public expenditure, although they have limited own-revenue resources and low fiscal autonomy. This imbalance creates not only a lack of incentives for own-revenue generation and for effective fiscal policy but also low accountability and responsibility for outcomes.

While subnational governments are relevant for spending purposes, their role on fiscal revenues is quite limited

Mexico's subnational governments have an important role in fiscal matters.

- They carry out more than half of the public expenditure (52% in 2015), in line with the average of the 9 OECD federal countries (50%).

- They are important public employers (65% of public staff expenditure).

- They conduct a big share of total public investment (79%), significantly above the average of OECD federal countries (66%).

Nevertheless, the share of subnational tax revenue in both public tax revenue and total subnational government revenue is among the lowest of OECD federal countries (OECD, 2018[3]). Mexican subnational governments collect only 6% of the tax revenues of the federal government, far below the average of OECD federal countries (41%) (Figure 4.1). The proportion of taxes in total subnational government revenue (7.2%) is the lowest among OECD federal countries and ranks among the last within all OECD countries (OECD, 2018[3]).

The unbalanced assignment of responsibilities across levels of government in Mexico is especially harmful to local governments. Municipal governments have extensive responsibilities on paper but in reality, a quite limited economic role. The share of Mexican municipal expenditure in public spending (9%) is among the lowest of the OECD federal countries (15%). While Mexican municipalities are in charge of providing basic public services and adopting territorial and urban municipal development plans, they often lack enough resources and incentives to update such plans and miss adequate infrastructure and sophisticated tools to collect taxes on top of instruments for guiding spending and measuring success (OECD, 2015[4]).

Figure 4.1. The fiscal role of subnational governments in the OECD and Mexico, 2015
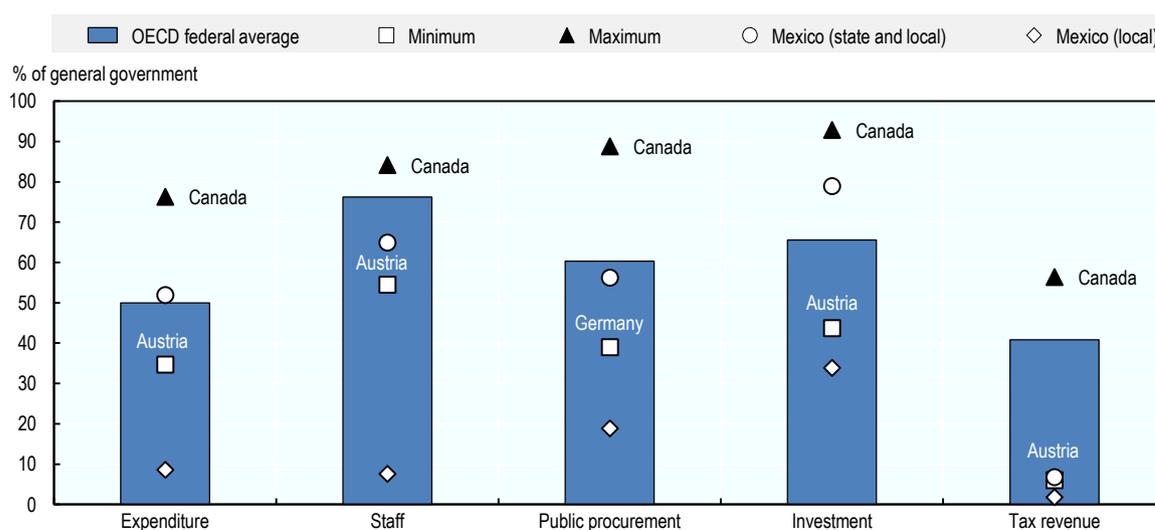
Note: Country names refer to maximum and minimum among OECD federal countries.
Source: OECD (2018[3]), *Subnational Governments in OECD Countries: Key Data (brochure)*, http://dx.doi.org/10.1787/region-data-en.

Federal transfers represent the main revenue source of subnational governments. While in federal countries the funding model of subnational governments is largely based on taxation, Mexican subnational governments are almost exclusively funded through grants and subsidies (92% of subnational revenue), whose share is by far the highest in the OECD federal countries (32% in average) (Figure 4.2).

Despite its federal structure and ongoing efforts of decentralisation, Mexico remains relatively centralised. Federal government control large spending areas and the autonomy of municipal government is still severely limited, which makes it the weakest tier of the Mexican government. The recent tax reform of 2014 is a step forward towards improving tax collection of subnational governments, the subnational governments' spending efficiency and increasing tax powers of the states. In this regard, the recent *OECD Economic Survey for Mexico* developed some key findings and recommendations (Box 4.2).

Figure 4.2. Subnational government revenue by type, 2015
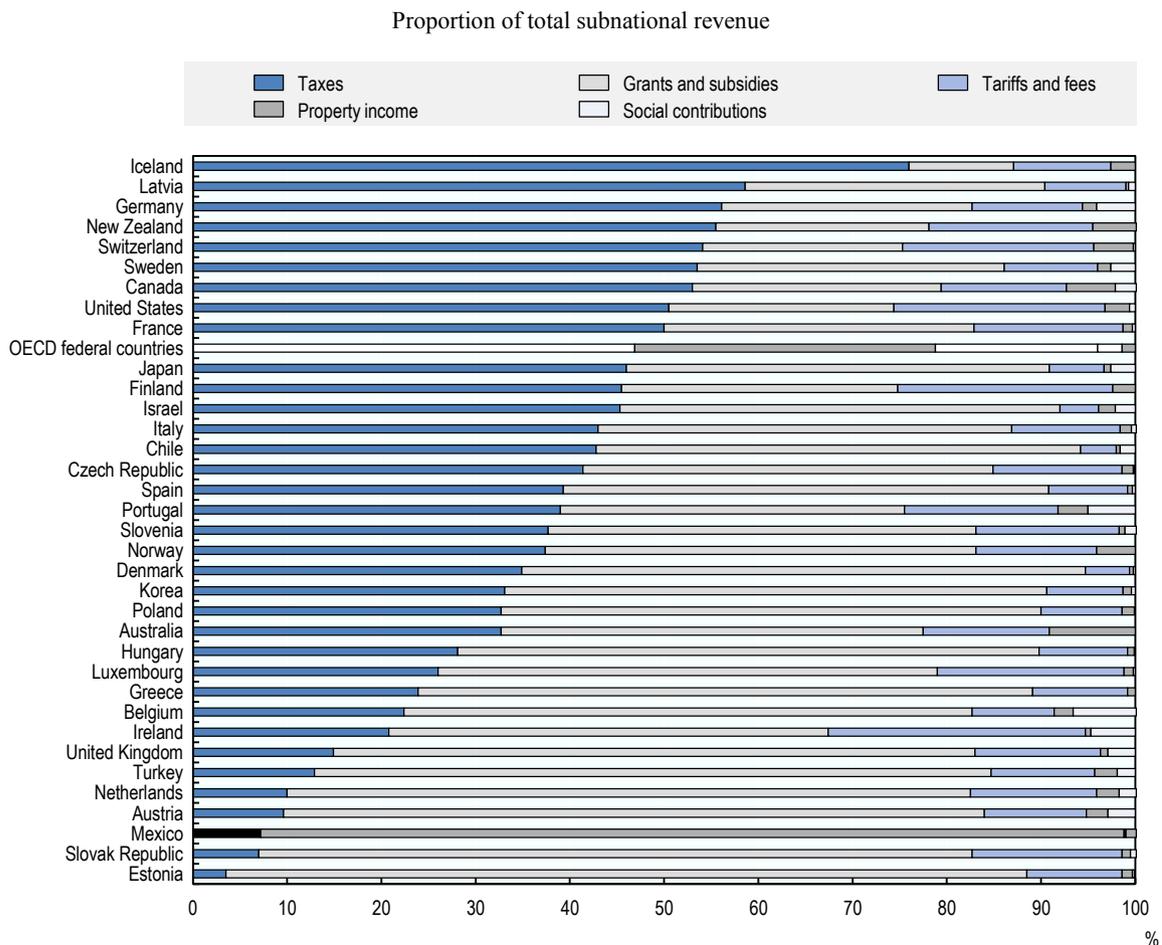
Proportion of total subnational revenue

Source: OECD (2018[3]), *Subnational Governments in OECD Countries: Key Data (brochure)*, http://dx.doi.o rg/10.1787/region-data-en.

Box 4.2. OECD recommendations on the Mexican fiscal policy

The 2017 *OECD Economic Survey* issued some assessment and recommendations on the Mexican fiscal policy:

Key findings	Recommendations
Social expenditure is too low to eliminate poverty and make society more inclusive	- Strengthen social expenditure on programmes to eradicate extreme poverty, such as Prospera - Raise and broaden the minimum pension to expand the old-age safety net
Tax evasion and tax avoidance lower government revenue	- Co-ordinate the collection of income taxes and social security contributions - Make better use of property taxes - Further broaden income tax bases and remove inefficient tax expenditures
Fiscal data are difficult to interpret on an international basis	- Fully separate PEMEX from the federal budget when feasible - Present budget documents and fiscal data on both domestic and national accounts standards
Fiscal relations with state-owned enterprises (SOEs) are distortive	- Normalise the taxation of SOEs by shifting to a tax regime similar to that of the private sector

Source: OECD (2017[5]), *OECD Economic Surveys: Mexico 2017*, http://dx.doi.org/10.1787/eco_surveys-mex-2017-en.

The Fiscal system in Hidalgo

The current government took office in 2016 within a difficult financial scenario of low levels of own revenue collection, increasing debt and interest rates (growth of 34% between 2011 and 2016) and a weak fiscal co-ordination with local governments. The state has been conducting actions to attain an efficient fiscal system, including a cut in unnecessary expenses and a lean management strategy. However, much more is to be done to achieve efficient fiscal revenue and spending.

Fiscal revenues

The System of Fiscal Coordination (SFC) establishes the regulation on the own resources that state and municipal governments can levy. Taxes on income, consumption, production and services are categorised as national taxes and are partially transferred to the subnational governments. States and municipalities are autonomous in setting their own tax rates and bases over payroll tax, vehicle taxes, property taxes and user fees. These taxes are designed at the state level and approved by the state congress.

Revenue sources of subnational governments in Hidalgo, as in Mexico, can be divided into four major groups: i) own resources; ii) non-earmarked transfers or revenue sharing (transfer participation – *participaciones*); iii) earmarked funds (*aportaciones*) and matching transfers (*convenios*); and iv) other sources of income such as revenues from state-owned enterprises and debt, among others.

Similarly to other Mexican states, the main income of the State of Hidalgo comes from federal transfers. Between 2012 and 2016, 90% of Hidalgo's revenues stemmed from transfers (62% earmarked and 28% non-earmarked), while own revenues represented 5% and debt 3.6%. This dependency poses not only problems in long-term planning, due to the transfers' fluctuation, but also creates negative incentives for the mobilisation and co-ordination of subnational government revenue. Furthermore, the budget negotiation of some transfers tends to be very complex and prone to political discretion.

Between 2000 and 2016, Hidalgo's revenues have experienced a five-fold increase (from MXN 9.3 billion to MXN 46.1 billion), in line with growth at the country level. However, the composition of the state revenue's sources has experienced important changes in recent years. While the share of own resources has decreased since 2011 (from 9% in 2011 to 5% in 2016), the revenues from earmarked transfers have gained prominence within Hidalgo's revenues (from 60% in 2011 to 65% in 2016) (Figure 4.3). As discussed in the next section, most of the drop in own revenues has been explained by a decrease in the amount collected from advantages and taxes (specifically property tax).

The overall debt level has decreased in recent years from 2.2% of the state gross domestic product (GDP) in 2015 to 1.8% in 2017. In fact, in 2017, Hidalgo ranked as the 13th state with the lowest debt ratio to GDP in the country, below the median of Mexican states (2.2%) (Figure 4.4).

Figure 4.3. Evolution of revenues in Hidalgo by type
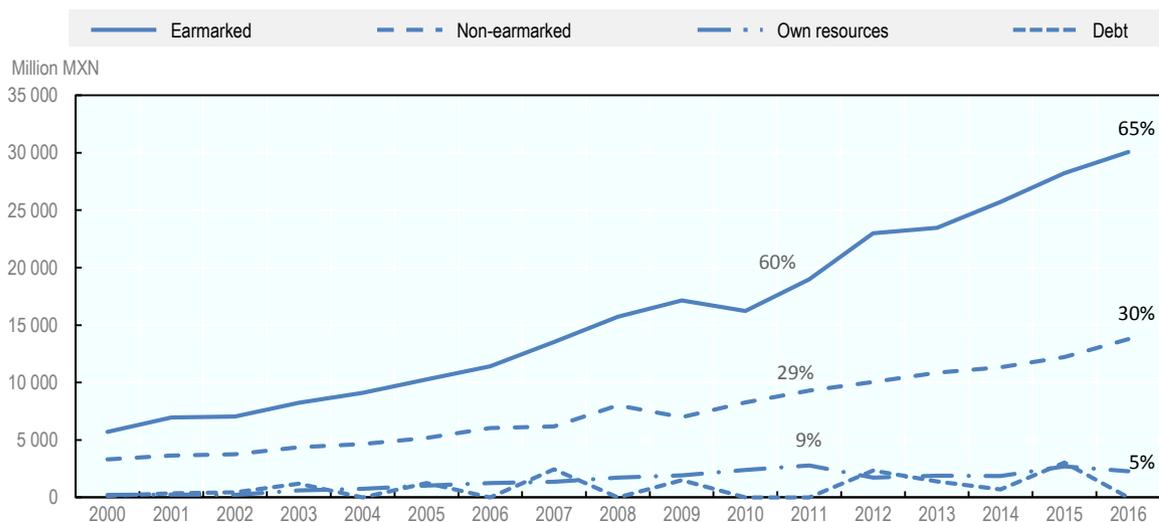
Note: Data labels represent the share in total revenue.
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

Figure 4.4. Public debt ratio to GDP per Mexican state, 2017 and 2015
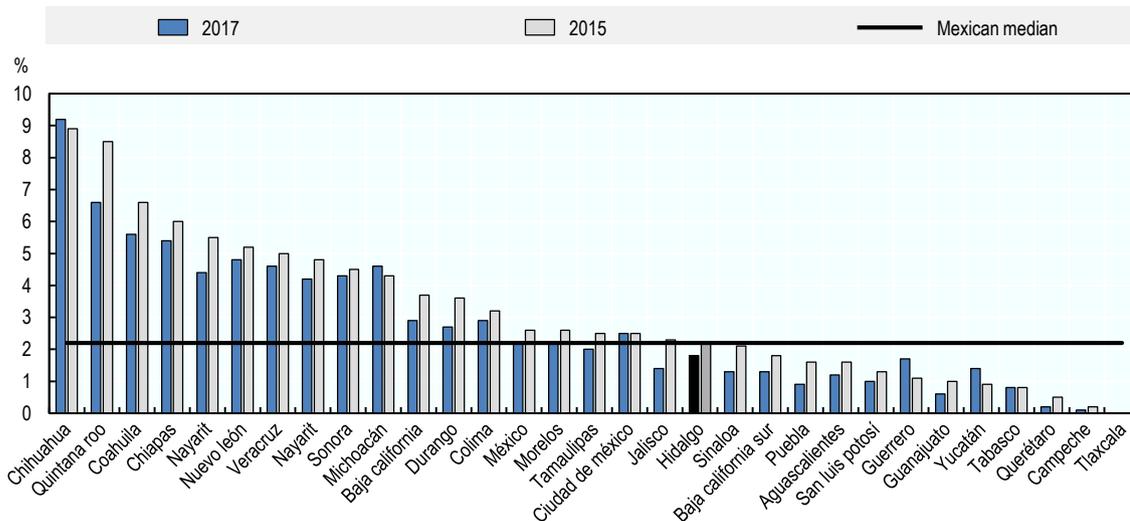
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

The central government has long sought to increase levels of own resources in the states by increasing taxation powers and incentives. The 2007 fiscal reform aimed to transfer the ability to levy a surcharge on income taxes and levy a sales tax as well as taxes on diesel, gasoline and vehicle ownership or use. Further incentives such as including fiscal efforts in the formulas of several non-earmarked funds have been also tested (Caldera Sánchez, 2013[2]). The recent 2014 tax reform in Mexico allowed states to charge income tax on payrolls and, together with municipalities, fully participate in the income tax of their administrative staff. It also established an incentive for municipalities to transfer the

administration of the property tax to the state government (OECD, 2017[5]). Nonetheless, in Hidalgo, such changes have not yet fully produced positive effects, leaving the share of own resources at similar levels as they were before the reforms (see Figure 4.3).

Hidalgo has unexploited potential to increase own revenues

In Hidalgo, own resources are divided into taxes, duties, products, special assessments and advantages. In 2016, most of the own resources came from taxes and duties:

- Taxes represent the largest share of own revenues in Hidalgo (62%). More than half stem from payroll taxes (58% over total taxes), followed by the taxes for public works (8%). Instead, property tax in Hidalgo represented just 3% of total taxes.

- Revenues from duties account for the other big share of own revenues (25%). They refer to the charge for services such as civil registry, public property registry, certificates, licences, permits, and roads and water rights.

- Revenues from products (7%) refer to the use or sale of goods and other products such as the lease of public property, financial return from assets in firms or the return on official publication.

- Advantages (5%) refer to revenues from fines and penalties, donations, contributions and others.

- Special assessments (1%) are collected from charges to people and business that benefit directly from public works.

At the municipal level, taxes also represent the largest source of own resources (49%). Most of the taxes (72%) come from property tax and transfer tax. Duties represent the other important bulk of own resources for local governments (36%). It refers mainly to license and permits, where the most prominent are construction licences, and the charges from the public services provided by the municipalities (water, public lighting or garbage services). The share of advantages (fines and penalties) represent the third highest own revenue for municipalities (14%).

Hidalgo ranks as the state with the fourth-lowest share of own revenues collection in Mexico (Figure 4.5). In 2016, just 5% of its income came from this source, far below the country average (9%). These figures have been, on average, similar since 2012. The relatively low share of revenue collection is also reflected at the municipal level. In average, Hidalgo's municipal governments collect 15% of their total revenues, below the average of Mexican municipal governments (21%). At the country level, the Mexican states with the highest share of own revenue collection, Nuevo León or Quintana Roo (17% and 16% respectively), can be characterised by a high degree of development (with higher levels of GDP per capita) and urbanisation (Caldera Sánchez, 2013[2]).

Out of own resources, the State of Hidalgo has significant scope to improve collection in taxes. Between 2012 and 2016, the average share of tax collection in Hidalgo (2.8%) was lower than the country average (4.1%). Moreover, the growth of tax collection in the state during this period (6%) has been below the country average (7%), ranking as the 12th state with a lower growth rate of tax revenue in the country (Figure 4.6). This phenomenon is mainly explained by the drop of the property tax's collection in the state (-24% annual average), which contrasts with a positive average growth across Mexican states (average of 5%).

Figure 4.5. Sources of fiscal revenues across Mexican states, 2016
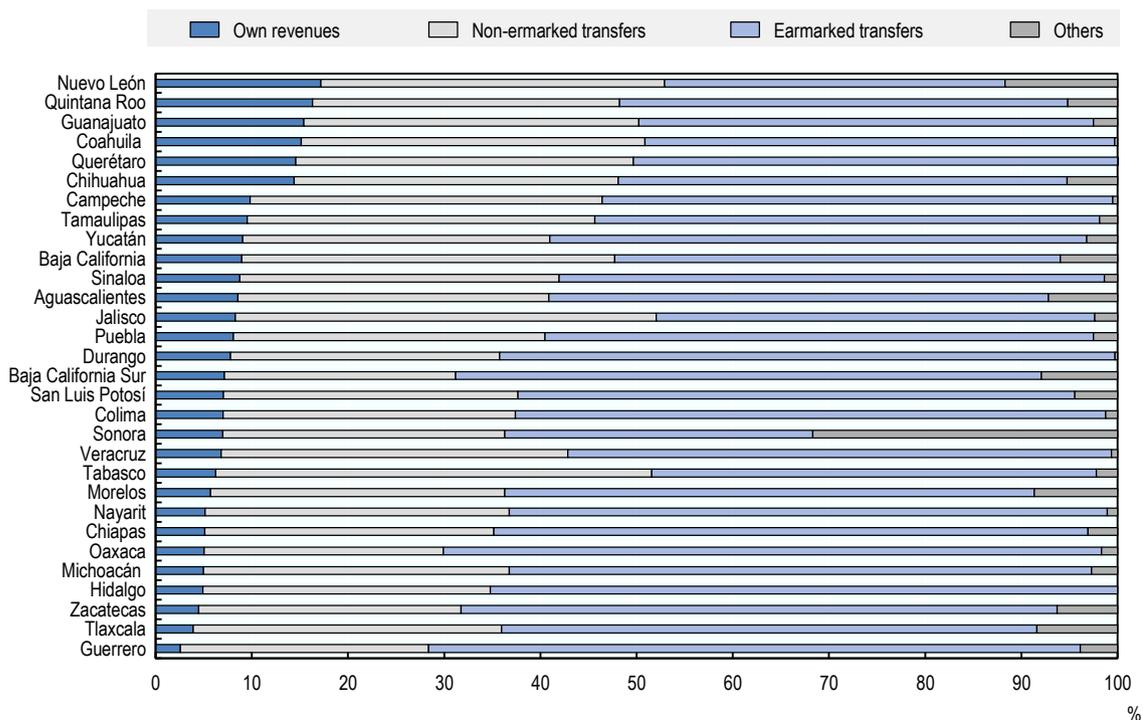
Figure 4.6. Growth of tax revenue in Mexican states between 2012 and 2016
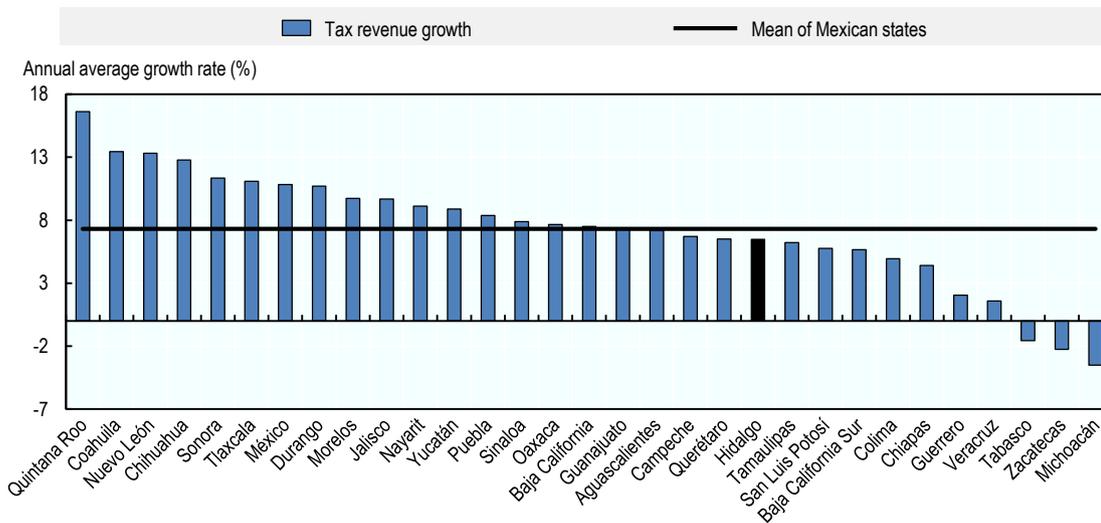
Payroll and property taxes are especially low in the state. The share of payroll (1.4%) and property taxes (0.4%) over Hidalgo's total revenue is lower than the average share across Mexican states (2.7% and 0.9% respectively) (Figure 4.6).

- **Payroll tax**. The low collection of this tax in the state can be explained by the low tax rate and the high labour informality rate. In Hidalgo, the payroll tax rate ranges from 0.5% to 2%, while the national average is between 2% and 3% (Government of Hidalgo, 2017[7]).

- **Property taxes**. The level of this tax at the state level is mainly affected by the low share of the ownership and use of vehicles tax. It contributes to 6% of the whole tax revenue, far below the figure of the country average (12%).

During 2012 and 2016, Hidalgo also underperformed in the collection of special assignments, duties and advantages (Figure 4.7). Within duties, the revenue from vehicles (0.6% over total revenue) is below the country's average (1.4%). The state instead has a relatively better performance in the levy of products, which referred to specific selling of public assets.

At the local level, the municipalities underperform in the collection of most of the own revenues' sources. During 2012 and 2016, the proportion of property tax in the revenue of Hidalgo's municipal governments was lower (6.3%) than in the average of the Mexican municipalities (9.8%). In particular, the weight of the land use tax in Hidalgo's municipal revenue (3%) was half the average in the country (6%). Duties, products and advantages at the local level also underperformed in comparison to the average of the country (Figure 4.8). Within duties, the municipalities of Hidalgo have a lower share on charges for the use and delivery of water (4% of the duties) and public lighting (2%) than the country average (8% and 10% respectively).

Figure 4.7. State own resources for Hidalgo and Mexico, average, 2012-16
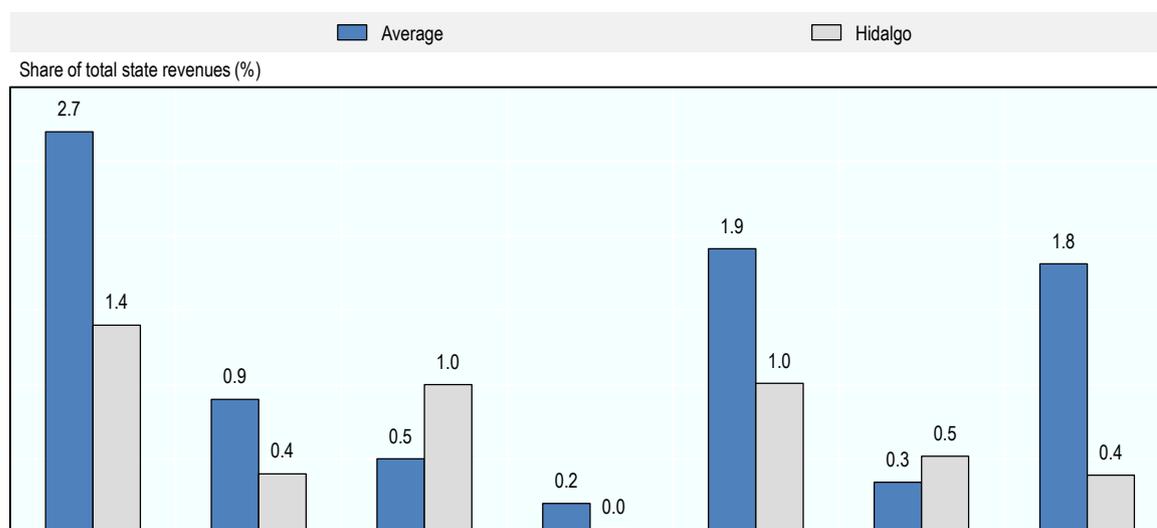
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

Figure 4.8. Municipal own resources for Hidalgo and Mexico average, 2012-16
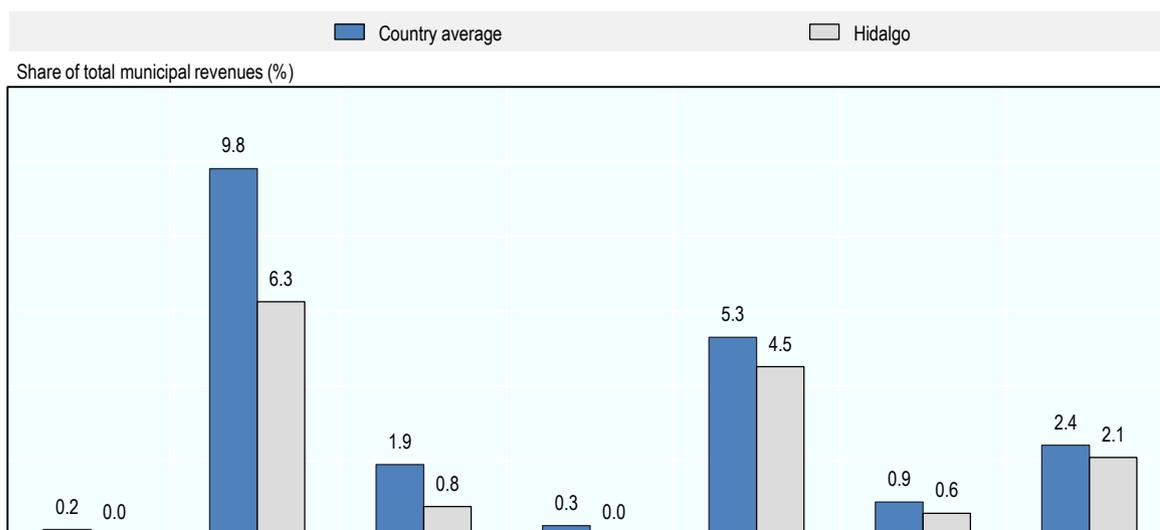
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

Hidalgo can increase the collection of own revenues by carry out a more efficient fiscal collection, improving law enforcement and broadening the tax base with special attention to the level of taxes.

In the case of payroll taxes. Hidalgo should revise the payroll tax rate, which is significantly lower than the country average. In terms of property tax, Hidalgo could make a greater use of this tax by considering the following actions:

- Encourage local governments to develop and update cadastres, property registries and urban plans. As mentioned in Chapter 3, just a few municipalities have updated the cadastre (7 out of 84), either because of lack of resources and institutional capacities or low political incentives. Some municipalities even lack a clear traceable official registry of the quantity, value and ownership of properties. The low property tax is not just a problem in Hidalgo but the whole country. Mexico has a relatively low share of property tax (2% of total revenues in 2015) compared to Latin America (3.4%) and OECD countries (5.8%) (OECD, 2018[8]).

- Hidalgo should further benefit from the policy introduced in the 2014 tax reform that allows states to manage the property tax of municipal governments, especially of the poorest municipalities.

- The state could also support municipalities with the training of personnel and capacity-building programmes for local governments.

- The digitalisation of urban development plans and exchange of digital information about cadastres would facilitate the process of updating the cadastres (see the fourth section in this chapter).

Concerning duties and advantages, improvements in the implementation of the rule of law (fines and charges) and a review of fees could lead the state and municipalities to increase the level of duties and advantages. Municipal governments could benefit from closely

monitoring the collection of vehicle fines and parking area charges as well as the fees from the provision of public services, especially water and public lighting. The issue of the water tariff is also a challenge for the whole country. In Mexico, water tariffs are low compared to OECD countries, which may result in overexploitation of water resources, providing a limited revenue for a sustainable provision of the resource (Caldera Sánchez, 2013[2]). The state, jointly with the water commissions, can play a major role in revising and supporting the tariff setting at the local level.

Additionally, the high level of labour informality is hindering the capacity to increase own revenues in the state, especially in poor municipalities. Informality affects the amount of taxes the government can collect, which in Hidalgo is especially harmful to payroll and property taxes in poor municipalities. Labour informality in Hidalgo (74% of the occupied population) is the 4th largest in the country. Alongside agriculture and the informal sector, the public sector plays a key role in the high level of informality in the state (see Chapter 1). In this matter, the State of Hidalgo needs to lead by example and reduce informal contracts in the public sector. It should also involve municipal governments to conduct a policy of informality reduction in public administration.

Evasion is also a challenge for the state and the country. The recent OECD economic survey for Mexico stressed that tax evasion in Mexico is high since firms and business across the country tend to understate labour costs to the social security system (IMSS) and overstate them to the tax administration (OECD, 2017[5]). In this case, Hidalgo can benefit from merging or further improving the co-ordination between income and social security administrations to reduce tax evasion, by promoting a single tax ID number for firms, for example.

The weak incentives to increase tax collection and the limited public information available on spending patterns are other challenges to mobilising own revenues in Hidalgo. The dependency on transfers has had a negative effect on local tax collection. Given the high political cost of increasing taxes, local politicians may be tempted to rely on federal transfers to finance public service delivery (Caldera Sánchez, 2013[2]). Since the federal transfers take into account the level of tax collections to assign the resources, increasing the requirements of own resources collection within the transfer formula should boost incentives for local governments to increase local taxes. Mechanisms of naming and shaming can be established in order to single out which municipalities are improving their collection of own resources and increasing public investment in strategic projects. This can be done by replicating and expanding indicators such as the Productivity Indicator for Municipal Governance (developed by the Comunidad Mexicana de Gestión Pública) (2016[9]). This indicator measures the relationship between the quality of public services, tax collection capacity (property tax) and its bureaucratic cost.

Furthermore, encouraging municipalities to publish fiscal spending in a timely manner will improve accountability and increase trust from citizens on the use of their taxes. Involving the community in fiscal decisions can boost awareness in the importance of paying taxes. Awareness of tax benefits coupled with tax simplification programmes and subsidies can motivate citizens to declare and pay taxes and fees. The case of Quintana Roo and Brazil can be a guide for the state (Box 4.3).

Box 4.3. Incentives to pay taxes

Brazil. In 2006, the Brazilian government introduced a simplified tax and regulation system for micro- and small companies, called Simples Nacional. The rationale was to lower tax compliance costs for small firms and encourage them to move into the formal sector.

Simples Nacional combines a range of taxes in a single monthly collection. Taxes that are included are the most important federal taxes and contributions. Microbusinesses are defined as individuals or corporations with gross revenue less than or equal to BRL 240 000 (USD 120 000) in each calendar year. Participation in the system is optional, and firms have to apply through a website. All states and municipalities must offer Simples Nacional. However, small states can adopt a different enrolment threshold for local tax collection.

In addition to Simples Nacional, a special programme encourages individual entrepreneurs (IEs) to become formal. IEs must first register with Simples Nacional. They cannot earn more than BRL 36 000 (USD 18 000) per year, must work alone or have only one employee, and cannot own or be a partner or manager of another company. IEs are recorded in the National Register of Legal Entities, which facilitates the opening of a bank account, loan applications and issuance of invoices. IEs benefit from a simplified tax system. They are exempt from federal taxes and pay only a fixed monthly amount. In return, IEs have access to benefits such as a retirement pension, sickness and maternity leave and insurance for workplace accidents.

Simples Nacional is reported to have contributed to the observed decline in informality. According to official data, the size of informal labour markets declined steadily to 49% of total employment in 2010 (from 52% in 2006). However, it remains hard to disentangle the effect of Simples Nacional from that of buoyant economic performance. There is also evidence that the IE programme has encouraged unregistered workers to become entrepreneurs.

Quintana Roo, Mexico. Between 2012 and 2016, Quintana Roo has been the state with the highest growth of tax collection in the country (16% annual average growth). This state has developed a series of strategies to boost the tax of use and ownership of vehicles. During the first semester of 2017, the state issued a 100% subsidy for the payment of driver's license certificate and a reduction of MXN 335 for the renewal of car plates (a process that must be done every 3 years). During the first 2 months of the subsidy, the state received 140 769 applications from citizens.

The state has also subsidised 100% the cost of changing car ownership. To access the subsidy, the person must meet some requirements: payment of the tax on alienation of vehicles between individuals; circulation card and plates; invoice that proves legitimate property; recent proof of address (electricity, water or property receipt); current official identification; and Federal Taxpayers Registry (R.F.C).

Sources: Brazil case adapted from Arnold, J. (2012[10]), "Improving the Tax System in Indonesia", http://dx.doi.org/10.1787/5k912j3r2qmr-en; Simples Nacional (n.d.[11]), *Website*, (accessed August 2018), http://www8.receita.fazenda.gov.br/SimplesNacional; State Government of Quintana Roo (2017[12]), *SEFIPLAN* http://cgc.qroo.gob.mx/en-dos-meses-sefiplan-ha-recibido-casi-141-mil-tramites-para-cambio-de-placas/.

Improving the management of federal transfers

The system of federal transfers in Mexico is comprised of earmarked and non-earmarked transfers. Overall, most Mexican subnational governments strongly rely on transfers from higher levels of government. It creates disincentives for sub-national governments to exploit their own revenue potential and build up their administrative capacities. Because of the volatile nature of fiscal transfers, such reliance often limits the subnational of medium-to-long term investments and renders them vulnerable in times of economic difficulty, as also seen in other countries such as Chile and Peru (OECD, 2014[15]); (OECD, 2016[16])). However, some intergovernmental transfers tend to be less distorting than others. OECD work provides a number of guidelines that can help governments design less distortive grants (Box 4.4). Non-earmarked grants, for example, tend to provide subnational governments with more autonomy to generate cross-sectoral policies or co-ordinate policies with other administrative jurisdictions.

Hidalgo has a higher dependency from fiscal transfers than the average of Mexican states. Between 2012 and 2016, the share of federal transfers in Hidalgo's annual fiscal income (90%), was above the average in Mexican states (82%). Such dependency has increased throughout the years from a share of 88% in 2012 to 95% in 2016. Most of the transfers in the state were earmarked (62% of the fiscal income), showing a higher dependency on this type of transfers than the average of the country (51%). Instead, Hidalgo has a relatively low share of non-earmarked transfers (28%) compared to the country average (31%).

The high dependency on transfers is mirrored at the municipal level. From 2012 to 2016, local governments received on average 83% of their fiscal income from transfers, above the average of Mexican municipalities (71%). Local governments experience, on average, a smaller dependency on earmarked transfers (47%) than the State of Hidalgo, although more than the national average (37%). Contrary to the state level, the share of transfers in local governments has been, on average, more stable during the last years. The fact that Hidalgo is relatively highly dependent on transfers is not surprising since they are based on the income of the state. However, as seen before, over-reliance on transfers can create negative incentives to change status and increase own revenues.

Box 4.4. The efficiency of intergovernmental grants

The table below summarises the efficient use of the various types of grants. The concrete aims are classified in terms of the general purposes of subsidisation, equalisation and financing. These, in turn, can be distinguished according to whether: i) the central government takes the initiative to impose or influence subnational service provision or investment (e.g. delegation of functions); or ii) the subnational government itself takes the initiative. The instrument column indicates the various types of grant instruments available, as well as some regulatory instruments that may achieve more efficiently the aims for which grants are often used. Discretionary grants are mentioned as a possible instrument for co-funding purposes. Co-funding arrangements are used in some countries to finance projects with objectives that are hard to achieve using matching grants and where both central and subnational governments have to be committed. The table should not be seen as a prescriptive blueprint since much depends on institutional architecture and country context. Nonetheless, it provides a framework that can serve as a starting point for thinking about the way grants are designed and used.

Table 4.1. Lessons for efficient use of grant instruments

Imposed programmes or standards	Compensation of spill-overs	Temporary projects and programmes	Basic services	Fringe services
Financing				
Extension of subnational tax base	X			X
Non-earmarked general-purpose grants	X			X
Non-earmarked block grants	X			
Earmarked discretionary grants			X (co-funding)	
Earmarked matching and non-matching grants	(X)		X (risk sharing)	
Subsidisation				
Earmarked matching grants		X (national spill-overs)	X (experiments)	
Imposition of co-operation		X (regional spill-overs)		
Equalisation				
Imposition of horizontal grants	X			X
Non-earmarked general-purpose grants	X			X

Sources: For table: Bergvall et al. (2006[17]), *Intergovernmental transfers and decentralised public spending*, *OECD Journal on Budgeting vol 5/4;*
OECD (2009[13]), *Regions Matter: Economic Recovery, Innovation and Sustainable Growth*, http://dx.doi.org/10.1787/9789264076525-en.

Non-earmarked transfers lack clarity and are volatile

Non-earmarked transfers, also called tax sharing revenues (*participaciones*), do not imply specific obligations in the spending of states and municipalities, giving more freedom for their allocation. These transfers intend to allocate resources proportionally to the participation of the states in the economic activity and to their tax collection effort. Resources are transferred as general purpose resources to Hidalgo through funds and shared taxes under the so-called Ramo 28 (see Box 4.5). The central government collects the shared taxes, agreed upon the system of fiscal co-ordination, and distributes them to states and municipalities. The main shared taxes are income taxes, value added tax (VAT), oil and mining revenues or taxes on new vehicles.

Non-earmarked funds (28%, 2012-16) are the second source of revenues in Hidalgo. The main fund to channel these transfers is the General Participations Fund (*Fondo General de Participaciones* – FGP), accounting for over 72% of non-earmarked transfers. The resources coming from the fund are allocated to the states based on different criteria, where the most relevant is the state gross domestic product (GDP) growth (60% of weight), followed by the local revenue growth (30%) and local revenue level (10%). Despite the former criteria, as seen before (Figure 4.9), the mechanism has had a limited effect in the increase of Hidalgo's own revenues.

At the municipal level, local governments receive most of their non-earmarked transfers from the FGP (56%), followed by the Municipal Support Fund (FFM) (31%). According to the Co-ordination Law of Hidalgo, the state must transfer 20% of FGP resources and other shared taxes to municipalities (in 2016 it transferred exactly 20%). The law also establishes the distribution criteria to the municipalities, which in the case of the FGP (and another 2 funds IEEP and taxes from new vehicles) and is based on population

(40%), level of marginalisation (30%), the collection of property tax and water charges (10%), tax collection growth (10%) and number of communities per municipality (10%). Other funds and shared taxes have their own distribution formulas. The lack of clarity in the allocation criteria (e.g. the discretion to allocate funds over the 20% of FGP) and the variety of formulas across the funds can lead to rent-seeking and hampers investment planning at the local level.

The non-earmarked transfers are subject to variation and present high volatility (Figure 4.9). The standard deviation of the non-earmarked transfers' growth (11%) is higher than the one of earmarked transfers (8%). Non-earmarked funds are heavily dependent on the performance of the national and global economy, especially when oil and mining prices are concerned. Although the Fund for Revenue Stabilisation of States (*Fondo de Estabilización de los Ingresos de las Entidades Federativas* – FEIEF) helps mitigate such variations, the volatility of the transfers is still high, which tends to limit the long-term strategic investments of subnational governments.

Figure 4.9. Change of non-earmarked and earmarked sources in Hidalgo
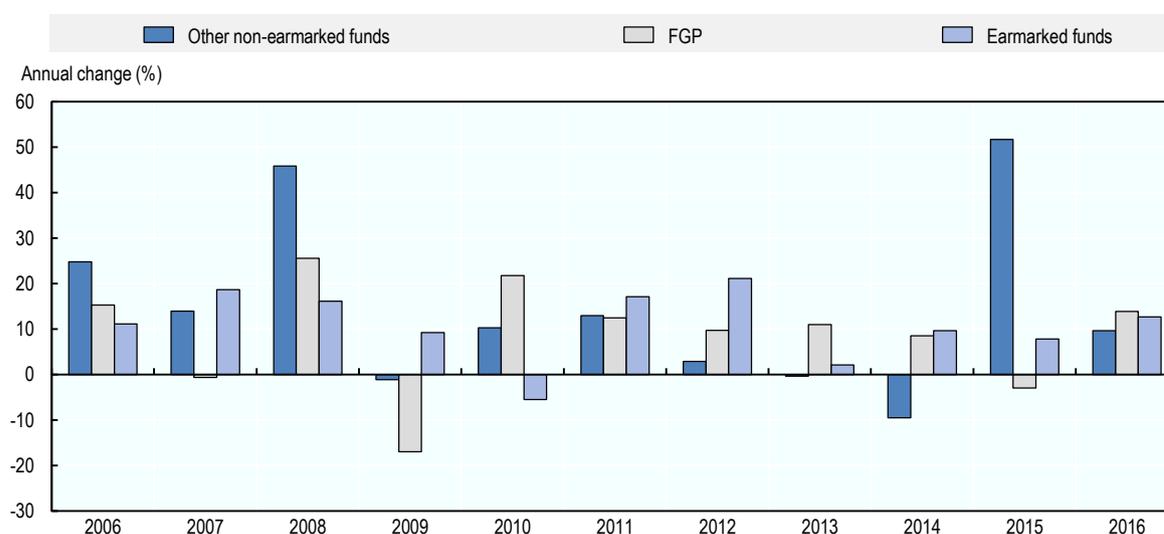
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

The non-earmarked transfers could be further used to decrease the level of inequality within Hidalgo. Since these transfers are mainly allocated on the basis of local tax efforts and population (i.e. the FGP), large municipalities with higher institutional capacity are receiving more resources than the poorest ones. In 2016, 22 municipalities (out of the 84) received 50% of the non-earmarked transfers. The municipalities receiving most of the transfers are not always the ones with lower poverty rates (

Figure 4.10). Although, in theory, the distribution of earmarked transfers should be used to compensate this distortion, as seen in the next section, earmarked transfers' distribution has ample room for improvement.

Box 4.5. Non-earmarked transfers (*participaciones federales Ramo 28*)

Non-earmarked transfers consist of funds and shared taxes that are collected by the federal government and then redistributed to the state and the municipalities. The revenue's sources of non-earmarked transfers for Hidalgo are presented below (selected):

Fund	Purpose	Funding	Distribution criteria	Recipient	% Ramo 28 (2016)
Fondo General de Participaciones (FGP)	Revenue sharing with states and municipalities	20% of RFP	State GDP growth (60%); local revenue growth (30%); local revenue level (10%)	State and municipalities	74
Fondo de Fomento Municipal (FFM)	Revenue sharing with municipalities	1% of RFP	Municipal revenue (property tax and water fees) weighted by state population	Municipalities	8
Fondo impuesto sobre la renta	Revenue sharing with municipalities	100% of income tax	Collection of state's tax	Municipalities	6
Fondo de Fiscalización (FOFIE)	Incentive for enforcement of tax laws	1.25% of RFP	Measures of local efforts of enforcement of tax laws	State and municipalities	4
Incentives over the IEPS on gasoline and diesel	Revenue sharing with states and municipalities	Nine-elevenths of the local gasoline tax collection	Participation of state in gasoline and diesel consumption	State and municipalities	4
Fondo de Extracción de Hidrocarburos (FEXHI)	Compensate for oil and gas extraction	0.6% of main oil royalty	Oil and gas production	State and municipalities	1
Impuesto Especial sobre la Producción y Servicios (IEPS)	"Sin tax" revenue sharing with states and municipalities	20% from tax to beer and alcohol; 8% tobacco	Percentage of taxes on tobacco, beer and alcohol relative to the national average	State and municipalities	4
Fondo de compensación (FOCO)	Compensate the 10 poorest states	Two-elevenths of the local gasoline tax collection	Opposite of nonoil GDP	State and municipalities	-

Note: RFP stands for *Recaudación Federal Participable*, the pool of federal revenues that is shared with states and municipalities. It includes income tax, VAT, all other federal taxes and oil revenues. It does not include revenue from public enterprises, federal government funding and certain other sources of non-tax revenue. States are required by law to share at least 20% of these resources with municipalities. Other shared taxes not included in the table are specific incentives over IEPS, participation from municipalities that conduct external trade and shared tax on new vehicles.
Source: CEFP (2017[14]), *Recursos Identificados para el Estado de Hidalgo en el Proyecto de Presupuesto de Egresos de la Federación 2017*, Centro de Estudios de la Finanzas Publicas.

Figure 4.10. Non-earmarked transfers per municipality and poverty rate, 2016

Earmarked transfers can aim for further equalisation and predictability

Earmarked transfers, the largest revenues in the State of Hidalgo (65% of total revenue) and in its municipalities (51%), can be divided into 2 main groups: those under a fund called *Ramo 33* (71%) and those under reassigned funds (29%). Funds transferred under Ramo 33 focus mainly on education and health. These resources are transferred to states and municipalities under a specific formula that seeks similar per capita levels of transfers per municipality by taking into account both the original economic condition and incentives for improvements. The State of Hidalgo transferred 15% of Ramo 33's resources to municipalities through the Funds of Infrastructure and Support to Municipalities. These resources represent, on average, 68% of the earmarked transfers in local governments. The earmarked transfers are intended to have a stronger equalisation effect among municipalities, which is not always met in Hidalgo. For example, as Figure 4.11 depicts, some municipalities in Hidalgo, such as Metepec, receive more resources than municipalities with double the poverty rate.

Figure 4.11. Federal transfers per capita and extreme poverty in Hidalgo's municipalities
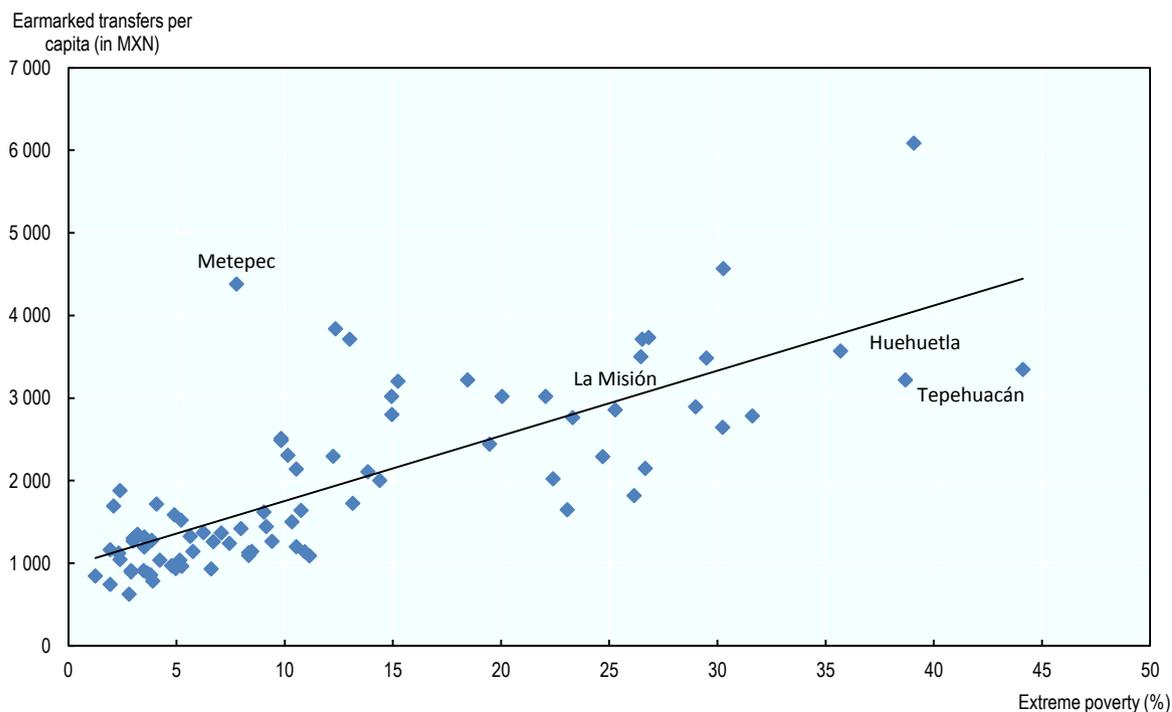
Note: Federal transfer rates are from 2016. Extreme poverty rate is from 2015.
Source: OECD calculations based INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

The transfers from Ramo 33 have a relatively high prominence in Hidalgo's revenue. Hidalgo receives 70% of earmarked transfers from Ramo 33, above the average share in the country (66%) (Figure 4.12). From the different Ramo 33 funds, the Fund for Education is the one that channels most of the transfers to Hidalgo (73%), followed by from the Fund for Health Service (16%). The criteria for the transfers of education to the states is mainly based on the share of public student enrolment in the state's spending on education and quality of education.

Most of the funds transferred through Ramo 33 give subnational governments little room for manoeuvre. In the case of education, 98% of the money transferred covers the financing of teachers' salaries, giving little scope for subnational governments to assign funds to other priorities within this sector. Furthermore, the lack of quality and reliability of data definitions within the distribution criteria (e.g. quality of education) makes the improvement of the allocation difficult and the support to the incentive structures built into the funds (OECD, 2017[1]).

Reassigned resources, the other important source of earmarked funds, are determined by political agreements. In 2016, reassigned resources accounted for 30% of the earmarked resources in Hidalgo, slightly below the country average (34%). These transfers stem mostly from what are deemed to be unexecuted resources and under-estimation of income by the central government. Most of these transfers take the form of matching transfers or agreements (*convenios de decentralización*) agreed upon between ministries and agencies, and the different states and municipalities. These agreements are mostly used for investments intended to improve the delivery of public services.

Figure 4.12. Source of federal earmarked funds
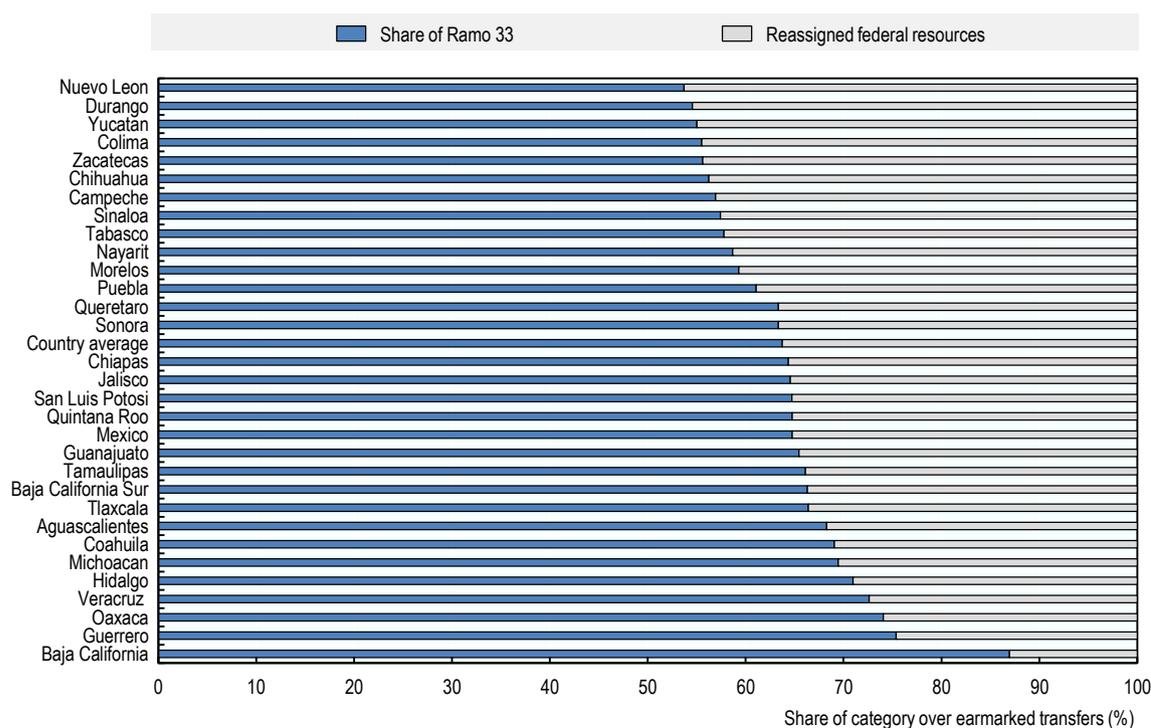
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

Education, culture and social security are the sectors that receive most of the reassigned transfers. The agreement for education and culture (39% of total reassigned resources) allocates a large proportion of resources to strengthen higher secondary education. In the case of the agreement for health and social security (18%), almost all the resources are dedicated to health with a low proportion allocated to social security.

Reassigned transfers are subject to political bargaining and do not necessarily create incentives to carry out efficient revenue collection. High reliance on such funds may bear significantly negative impacts due to the discretion that is applied in their assignment. The transfer of these funds is in theory subject to the reassignment of the central government to match the objectives of the national development plan. However, in practice, their distribution is subject to strong political bargaining and there is lack of transparency in their allocation (Caldera Sánchez, 2013[2]). These funds do not improve incentives to increase own revenues, planning or link resources more closely to the budgetary mechanisms. These transfers are however subject to higher accountability and control from federal government, given their contractual nature.

Fiscal expenditure in Hidalgo has a limited space for own decisions

Public expenditure in Hidalgo is strongly linked to the responsibility attached to decentralisation system in Mexico. The transfer system leaves Hidalgo relatively little scope for resource allocation. After distribution, non-earmarked resources allocated to municipalities (8% of total income in 2016) and earmarked transfers (65% in 2016), the State of Hidalgo disposes of 36% of the income to current expenditures, financing capital and investments.

Between 2012 and 2016, the allocation of the expenditure in Hidalgo included (Figure 4.13):

- Transfers and allocations (61%), which refer to transfers to sectorial programmes, mainly education (68%) and health (17%). This share of transfers is higher in Hidalgo than at the country average (46%).

- Resources transferred to municipalities (17%) represent transfers by law that the state channels to local governments.

- Functional expenses: personal services or wages (5%), public debt (3%) and other various expenses, such operational services and supplies (10%).

- Public investments account for the remaining 4% of the budget, which results below the average of Mexican states (5%).

Figure 4.13. Distribution of expenses by type, average, 2012 to 2016
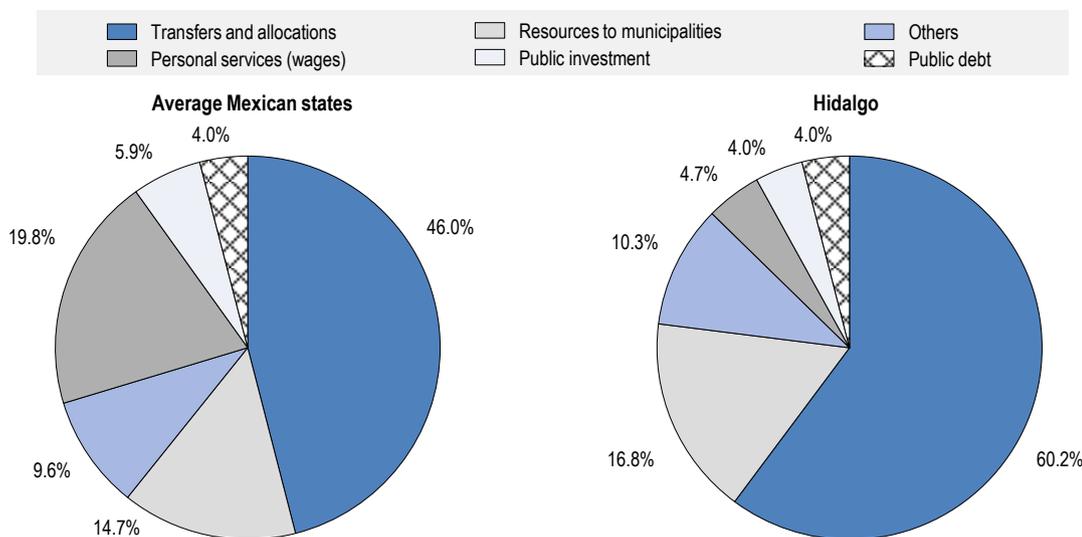
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

The distribution of public spending has changed significantly during the last years. Since 2000 to 2016, the share of the spending on transfers and assignments, especially to health, has increased (from 58% to 64%), contrary to the share of public investment which has substantially decreased from 12% in 2000 to 1% in 2016 (Figure 4.14). Hidalgo's drop in public investment is larger than at the country average (from 7% in 2000 to 4% in 2016), mainly explained by a reduction in the investment in public works and in productive projects. A lower public investment is not only detrimental to economic growth in the long term but also to well-being at the local level.

Given its earmarked nature, the spending on transfers and assignments in Hidalgo mainly focuses on education. In 2016, education (educational institutions and programmes) represented the largest single expenditure from transfers and assignments in the state (43% of the total expenses), doubling the resources allocated to education as compared to the average in the Mexican states (20% of total expenses). The spending on health (10%)

and infrastructure (3%) were the 2nd and 3rd biggest transfer. Resources allocated to tourism and agriculture did not represent a significant proportion of total expenses (0.04% and 0.05% respectively), and were lower than at the national average (0.6% and 0.1% respectively).

Figure 4.14. Expenditure in Hidalgo, percentage of total expenses
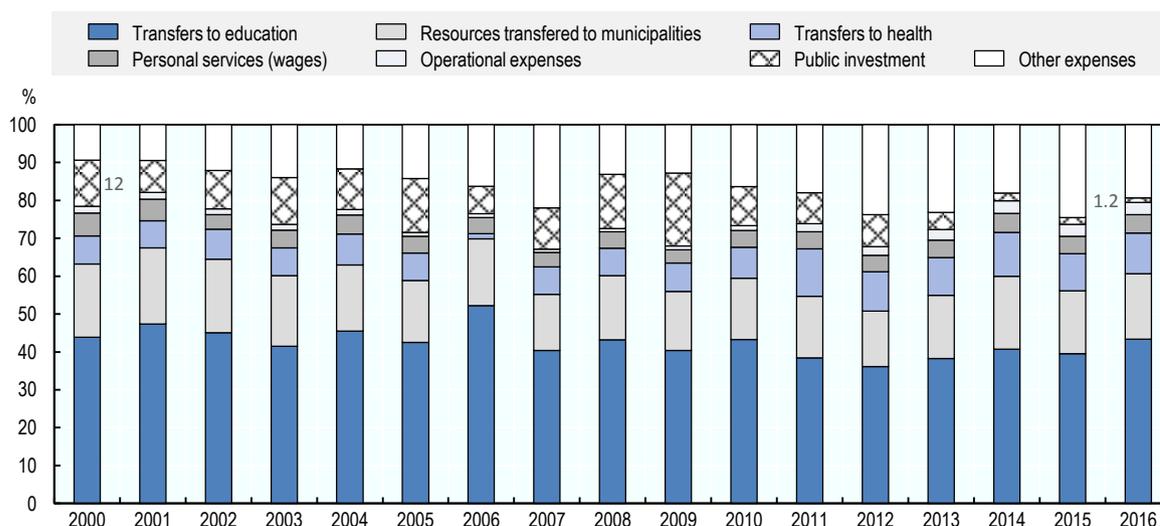
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

Hidalgo is one of the states with the lowest per capita expenditure allocated to personal services (MXN 656 compared with a country average of MXN 2 958 in 2015), despite its high proportion of public servants. Hidalgo ranks as the 9th state with the greatest number of public servants in the country (74 202 in 2015). Personal services refer to wages and payroll obligations such as social security and compensations. Low retribution or uncompleted wage schemes for public officers lead to high rotation and low incentives as well as making them prone to participate in corrupt practices. The relatively low level of personal services spending would also indicate that not all public servants are receiving full welfare payments. As mentioned before, the State of Hidalgo has high levels of labour informality, in which the public sector has an important role. This again stresses the need for Hidalgo to address labour informality in public administration.

Hidalgo is the state with the sixth lowest level of public investment per capita in Mexico (Figure 4.15). Since 2012, public investment in the state (4% of total revenues) has been below the national average (5%). In 2016, public investment in Hidalgo was mainly allocated to physical infrastructure, where roads and highways represented over 38% of the total investment. It is a positive sign of the effort the state is conducting to connect and build the basic enabling factors for economic development in the territory. Investments in urbanisation (15%) are particularly larger than the national average (11%), which underlines the rapid urbanisation process the state is carrying out. Nevertheless, there is no public investment allocated to specific sectorial projects, in contrast with the country average (10%). Most Mexican states use public investment to develop sectorial projects on agricultural or tourism development.

Figure 4.15. Public investment per capita, 2016
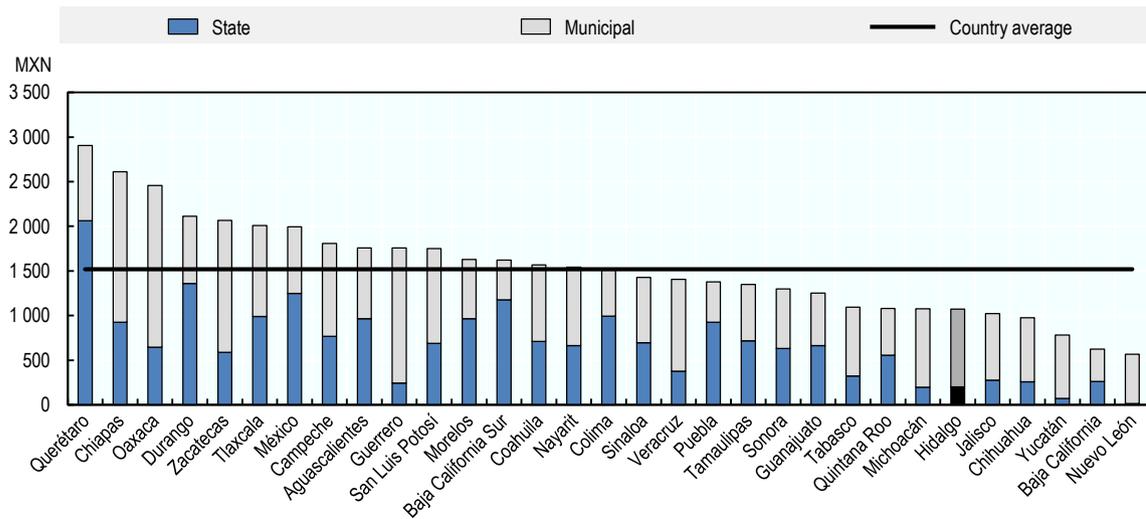
Source: INEGI (2016[6]), *INEGI Databases*, http://www3.inegi.org.mx/sistemas/microdatos (accessed 15 June 2018).

At the municipal level, public investment represents the most important share but is mainly allocated to urban development and security. Between 2012 and 2016, the spending of Hidalgo's municipalities was allocated to personal services (32%), public investment (26%) and operational expenses (13%). The main public investments were land division and urbanisation (24% of total investment), non-residential construction (8%) and provision of infrastructure for water, oil, gas, electricity and telecommunications (7%).

Concerning the sectorial investment, municipalities allocated a smaller share to productive projects (1.1%) than the country average (2%). The resources for productive projects in Hidalgo's municipalities are mainly allocated to public security (96% in 2016), far above the share of the country average (17%), which allocated greater resources to agriculture and forestry (10%). The State of Hidalgo should hence encourage diversification of sectorial investment (i.e. environment) and better link investment with the strategic sectors at the local level to increase well-being and contribute to economic objectives. For this, monitoring mechanisms (e.g. performance indicators) to tighten budget allocation with policy outcomes at the local level could be instrumental (see next section this chapter). Hidalgo should also seek ways to increase the quality and level of public investment by promoting projects that attain critical mass and public-private partnerships as well as evaluating the cost-benefit of new funding.

Despite the low property and land use tax collection, the above figures underline that the state and local governments have invested important amounts of resources on urbanisation. This is welcome since the Hidalgo's rapid urban growth creates high pressure on the provision of public services (see Chapter 3). However, given the low property tax collection and the outdated cadastres in Hidalgo, the fiscal pressure to sustain urbanisation creates a negative effect on the state's public finances by reducing the fiscal resources to invest in other projects. This phenomenon stresses again the need for the state to align public needs and fiscal revenues by making a greater effort to improve property tax collection.

To achieve efficiency of public spending, Hidalgo should consider increasing the capacity for municipal governments to adjust expenses and improve co-ordination among different levels of government. Currently, there are no mechanisms to incentivise joint spending among municipalities and to promote multi-year budget. At the local level, some spending decisions are driven by political interest with an aim of short-term results rather than meet the real needs of inhabitants and long-term outcomes (Valenzuela-Reynaga and Hinojosa-Cruz, 2017[15]).

In summary, this section underlined the following:

- Hidalgo has one of the lowest levels of own revenues in the country, which in turn makes it highly dependent on federal transfers. Within own revenues, property taxes are especially low in the state.

- The transfers are mainly earmarked, which provides little scope for decision and in some cases (i.e. reassigned resources) difficult investment planning. Non-earmarked transfers are volatile, lack clarity on the allocation criteria and present characteristics of discretionary decision making.

- Overall, transfers have aimed to incentivise tax collection and decrease inequalities among municipalities. Nevertheless, incentives are still low or not well perceived by local governments and the effective distribution from both types of transfers falls short on lifting the poorest municipalities above the richest ones.

- Debt in Hidalgo has decreased and is currently low for Mexican levels. A cost-benefit analysis of new funding can be instrumental in increasing quality and level of investment.

- Public investment is one of the lowest in the country. It is mainly allocated to security over other sectors that could offer economic opportunities for the state.

- Spending on urban development is welcome. However, there is a need to match this spending with fiscal sources that stem from this activity (property taxes).

Improving governance in Hidalgo

Hidalgo's geographic location and its connectivity with key markets, international ports, logistic centres and industrial areas offer untapped opportunities for growth in the state. However, the development of the state also requires addressing several challenges such as the strong south-north divide, the high levels of poverty and informality and the limited capacities at the local level as well as weak design and use of co-ordination mechanisms across levels of government.

These challenges can be attributed, to some degree, to the endogenous characteristics of a small state, within the Mexican decentralised system, with three main features that stand out: i) limited scope of goals and activities; ii) predominance of strong informal relationships and procedures; and iii) limited steering or control (Box 4.6).

In particular, the deficient connectivity with and among the northern municipalities makes co-ordination difficult in Hidalgo (see Chapter 1 and 3). The physical barriers to reach municipal governments and create fluent interaction among them jeopardises the realisation of economic potentials. In some cases, it can take more than half a day to travel from Pachuca, where the main governmental institutions are concentrated, to northern municipalities. In addition, Internet access is still incipient across the territory

with some municipalities even lacking a reliable Internet connection, which in turn creates uneven communications among municipal governments far from and close to the capital.

In this scenario, the government administration of Hidalgo has made a great effort to modernise and improve the quality of public administration, the efficiency of public services and create a sound business environment to spur on new and local firms. It has also developed a co-ordinated territorial agenda by encouraging municipalities to follow a private-led approach, focusing on business attention (Chapter 3).

This effort is materialised in the recent State Development Plan 2016-22. The current administration of Hidalgo elaborated a State Development Plan upon entering into office, as required by Mexican legislation. To do so, the state created the 2016 Law of Planning and Foresight, which is the legal framework for planning in the state, and upgraded the status of the former Secretary of Planning, Urban and Rural Development into a planning agency directly under the governor.

Box 4.6. Characteristics of small-state public administrations

Early research into the characteristics of small state governments highlighted five interrelated characteristics that are common to some degree across such states. While developed after studying sovereign nations, some or all of these characteristics can be relevant to administrations in federal countries where individual provinces or states have significant autonomy and decision-making power over the territory's administration as well as policy design and implementation.

1. **Limited scope of goals and activities**. Small state administrations have to fulfil certain public prerogatives, such as maintaining health and education systems, regardless of the size of the country. Small states, therefore, need to prioritise and limit the number of goals and activities they pursue, the scope of action and the means of delivery (e.g. production versus the purchase of certain public goods).

2. **Multifunctionalism of civil servants and organisations**. Public officials in small administrations tend to have many, diverse responsibilities compared to their peers in larger administrations, who have more opportunities to specialise in a particular field. This is also seen in state bodies; for reasons of scale and resource sharing, there is a greater tendency to merge units (e.g. ministries, agencies, etc.) than to establish or maintain separate entities.

3. **Informality of structures and procedures**. Formal co-ordination mechanisms are more limited in small states and there is a tendency for structures to adapt to individuals rather than individuals to fit in formal organisational frameworks. While personal relationships are important in any system, senior civil servants in small states are more likely to use informal means of communication to consult and inform one another. Civil servants depend on these relationships – which can combine the professional and personal – in order to properly execute their responsibilities. These relationships can also serve as a bridge between executives and lower levels of organisations.

4. **Constraints on steering and control**. Independent scrutiny and reporting mechanisms tend to be less frequent in small states than in large ones due to limited resources, lack of specialisation and political partisanship. The political-

administrative interface is usually less clearly defined in small states, with greater mobility between the administrative and political spheres. Senior civil servants, therefore, can have more autonomy in smaller states due to less formal oversight.

5. "**Personalism" of roles and functions**. The multifunctionalism, informality and limited control in small states allow a limited number of individuals to exercise a fair amount of influence based on their competencies, networks and personal qualities. While this can support agility and problem solving, it also leaves room for *ad hoc* decision making and subjective judgement.

These characteristics are not "good" or "bad" in and of themselves, but their interaction influences the governance contexts. For example, aspects of personalism that might be perceived as "leadership" in a system with institutional checks and balances can take on a less benevolent aspect in the absence of counter-balancing forces.

Sources: OECD (2016[41]), *OECD Territorial Reviews: Córdoba, Argentina*, http://dx.doi.org/10.1787/9789264262201-en; OECD (2011[16]), *Estonia: Towards a Single Government Approach*, http://dx.doi.org/10.1787/9789264104860-en; Sarapuu, K. (2010[17]), "Comparative analysis of state administrations: The size of state as an independent variable", Halduskultuur – Administrative Culture, Vol. 11(1), pp. 30-43.

Hidalgo's development plan is comprehensive but has room for improvement

The state plan is composed of 5 strategic pillars with 29 strategic objectives (Table 4.2). It has three transversal pillars, which are: i) gender mainstreaming; ii) development and protection of children and adolescents; and iii) incorporation of sciences, technology and innovation. The transversal pillars compose the strategic pillars, meaning that women's equality, children's protection and support for innovation are necessary for the development of these pillars and as such have to be mainstreamed into their specific objectives.

The plan's elaboration started from a comprehensive diagnostic of economic, environmental and social conditions in the State of Hidalgo, across the five pillars. The data was provided by different state secretaries and from external sources such as the National Institute of Statistics and Geography (INEGI) and the United Nations. The diagnostic aimed to be consensual, with an element of civic participation through an online platform (#YoPropongoHgo) and the organisation of five regional fora for consultation. The plan is thus context-specific and has broad input from within the government as well as sectors of civil society.

The plan is aligned with the National Development Plan (NDP) The national plan has five objectives (peace, social inclusion, quality education, prosperity and global responsibility) and three transversal strategies, namely gender mainstreaming, modern government close to people's needs and democratisation of productivity. The State of Hidalgo maintained this structure of five main pillars and three transversal ones, with some of the objectives being similar to the national ones. This shows that the state is committed to the goals set for the whole country, and in a federal state this harmonisation is necessary.

Table 4.2. The National Development Plan of the State of Hidalgo

Pillars of the State Development Plan	Strategic objectives
A modern government	1. Zero corruption 2. Increase citizens participation 3. Promote digital government 4. Improve regulation 5. Improve institutional capacity of municipalities 6. Strengthen fiscal capacity 7. Efficient fiscal management
Economic dynamism	1. Inclusive economic growth 2. Innovative economic environment 3. Co-ordination of productive sectors 4. Development leveraged on tourism 5. Modern and productive agriculture
Inclusiveness	1. Social and integral development 2. Quality of education 3. Quality of health 4. Quality of sport culture 5. Art and culture
Justice and security	1. Improve governance 2. Human rights 3. Comprehensive security 4. Justice with human approach 5. Social reintegration 6. Civil protection
Sustainable development	1. Equity of services and sustainable infrastructure 2. Culture and environmental training 3. Comprehensive and sustainable territorial planning 4. Sustainable and efficient mobility 5. Preservation of the natural heritage 6. Planning for a sustainable territorial development

Source: Government of Hidalgo (2016[25]), *State Development Plan 2016-22*

The plan is also aligned with the Sustainable Development Goals (SDGs), which are a collection of 17 global goals set by the United Nations Development Programme. The state shows commitment with the international agenda of social inclusion, poverty reduction, gender equality, environmental sustainability and just and peaceful societies. The SDGs compose the 2030 Agenda for Sustainable Development, which is reflected in Hidalgo's plan as 2030 is the proposed timeline for the second evaluation of objectives. Table 4.3 shows the alignment of some provisions of the state plan with the SDGs and the PND.

Table 4.3. Alignment of objectives (selected)

2030 Agenda	National Development Plan 2012-18	State Development Plan 2016-22
Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	**Transversal approach** (Mexico with global responsibility) **Strategy II. Close and Modern Government** 1.1.1 Contribute to the development of democracy Strategy 4.7.2 Implement a comprehensive regulatory reform	**Axis 1. Honest, Close and Modern Government** 1.1 Zero tolerance to corruption 1.2 Boosting citizen's participation 1.3 Digital government 1.4 Regulatory reform 1.5 Institutional development of municipalities 1.6 Strengthened treasury 1.7 Effective administration of resources
Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all **Goal 1**: End poverty in all its forms everywhere **Goal 9**: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation	**Transversal strategy - Democratise productivity** **Objective 3.5** Make sciences, technology and innovation pillars for economic and social sustainable progress **Prosperous Mexico, objectives**: 4.2 Democratise access to financing of projects with growth potential 4.3 Promote quality jobs 4.7 Guarantee clear rules that encourage the development of a competitive domestic market 4.8 Develop the strategic sectors of the country 4.9 Count on transport infrastructure that is reflected in lower costs for economic activity	**Axis 2. Prosperous and Dynamic Hidalgo** 2.1 Inclusive economic progress 2.2 Dynamic and innovative economic environment 2.3 Articulation and consolidation of the productive sectors 2.4 Tourism, development lever 2.5 Modern and productive countryside

Source: Government of Hidalgo (2016[25]), *State Development Plan 2016-22.*

The State Development Plan of Hidalgo has two timeframes: 2022, as the first year of the subsequent administration's term, and 2030, as proposed by this international agenda. The 2030 timeline suggests a long-term vision which is not widespread in the practice of state development plans in Mexico, due to their very character as planning instruments which do not outlast an administration, since the subsequent administration is obliged to elaborate its own plan. For one, this vision is welcomed, as many objectives set in the plan require long-term changes to be achieved. Yet at the same time fulfilling this long-term vision can prove challenging, as local governments in Mexico tend to work to the election timetable. That is to say, the State of Hidalgo will need legal instruments that can formalise this commitment to the 2030 Agenda and guarantee that the objectives set in the plan will be pursued until then, as well as evaluated against that timeframe. The Secretary of Planning, Urban and Rural Development could envision such role if it has technical staff that outlasts election cycles.

The aspect of the two timeframes relates to having short-, medium- and long-term objectives. The state plan does not classify objectives according to the timeframe needed for implementation. It could be assumed that all objectives should be achieved until 2022, which is not reasonable since it contradicts the 2030 timeframe inserted in the plan and also fails to acknowledge that some objectives take longer to achieve than others. Moreover, in very practical terms, if there is no timeframe there is no setting of priorities, and with 29 strategic objectives and 116 general objectives, it is difficult to define which ones should receive more investment. When government priorities are too plethoric, they tend to disseminate resources and focus, leading to diminishing policy impact. Priorities in Hidalgo are not clearly stated over the short, medium and long term making it hard to articulate public policies into a clearer roadmap.

The State of Hidalgo could elaborate a strategic policy document to indicate which objectives the state is prioritising for the next few years, as well as clarify which ones are inscribed in the longer 2030 timeline. This would further help the definition of indicators and the activity of evaluation (see section below for further discussion). One possible way is to prioritise the objectives of transversal strategies, as they should be common to the other pillars and develop priorities that address bottlenecks and aim to raise enabling factors for growth (see Chapter 2). Another pathway, already indicated in the plan itself (Government of Hidalgo, 2016[24]), is to prioritise objectives and related programmes that generate greater social benefit/impacts and thus support social inclusion.

Implementation of the State Development Plan

Mexico has seen low levels of implementation of plans. One reason for that has been mentioned as low tax collection, which impacts local budgets and availability of resources, added to the fact that states depend heavily on transfers from the central government and thus have relatively low levels of revenue autonomy. Other reasons are low organisational levels in state administrations and difficulty in implementing the rule of law (Sustainable Governance Indicators, 2017[19]). The State of Hidalgo has to put in place instruments to tighten the link between the provisions of the plan and their operationalisation.

The main instrument to implement the State Development Plan is through programmes, which can be sectorial or special. Programmes make the link between the provisions of the plan and the annual budget. The three transversal pillars each have a transversal programme (gender mainstreaming, children's protection and science and technology support). The plan does not spell out which secretaries of the state government are leading the work, but it is hoped that leadership will be balanced out by the division of responsibilities, making every sector of the government accountable for progress in these areas.

The five strategic pillars have three or four programmes under their heading, each one co-ordinated by the secretary responsible (Government of Hidalgo, 2016[24]). For instance, the pillar of sustainable development contains three programmes: i) environment and natural resources; ii) public works and spatial planning; and iii) mobility and transportation. The secretaries responsible for these topics are hence responsible for the corresponding programme. This sectorial division reproduces the existing structure of the state administration, which should facilitate implementation. Nonetheless, the strategic pillars bear cross-cutting issues: to illustrate, environmental sustainability cannot be achieved by simply dividing responsibilities between the Secretary of Environment and Natural Resources (SEMARNAT), the Secretary of Transport and Mobility (SEMOT)

and the Secretary of Public Works and Territorial Planning (SOPOT). Instead, it requires sharing responsibilities, i.e. understanding that each of these elements has to be informed by the others and that only the composition of them together can promote this objective.

The programmatic side must include thus the creation of formal mechanisms for inter-sectorial co-operation. It could involve establishing special cabinets (composed by representatives of each secretary), joint authorities, special task forces, or inter-secretary working groups that can meet regularly and take stock of the progress made. These bodies could divide budgetary allocations and co-ordinate public investment decisions. The *OECD Toolkit for Effective Public Investment across Levels of Government* (henceforth the OECD Toolkit) includes as potential solutions for horizontal co-ordination the creation of joint authorities and platforms for dialogue and the adoption of co-ordinated investment strategies (Principle 3) (OECD, 2014[20]). It also indicates that formalisation of co-ordination mechanisms can help bridge information and policy gaps and identify joint investment priorities (Principle 2). As discussed in the next section, although Hidalgo has various examples of co-ordination mechanism, much more is to be done on this front.

As programmes are by nature multi-year, so should be the provision of funds to implement them. In Mexico, the National Law of Treasury Administration of 2006 foresees multiyear budgeting of expenditures (Article 32). The State of Hidalgo has not, however, made use of this provision. While Mexican states depend on transfers from the central government to carry out major projects, this dependency does not preclude the need to make their own annual budgetary allocations. In the referred OECD Toolkit, medium-term budget forecasting is mentioned as an instrument for sound and transparent financial management (Principle 10). Indeed, multi-year budgets or medium-term budget forecasts are tools that can be deployed to tighten the link between programming and spending and thus support the implementation of the State Development Plan.

Other instruments that can support the implementation of the plan, to make it more effective are strategic public procurement, consistent regulatory systems, risk assessment and reinforced expertise of public officials at the state level (OECD, 2014[20]). Strategic public procurement can ensure effective public service delivery while pursuing strategic government objectives (Principle 11 of OECD Toolkit). The *OECD Review of Public Procurement in Nuevo León, Mexico* (OECD, 2018[21]) provides concrete proposals for reform which can also be useful in the context of Hidalgo.

In Principle 4, comprehensive and *ex ante* risk appraisals are said to help identify the cumulative impacts of a given project and ensure value for money. Hidalgo should make use of risk assessment in project development, which would contribute to render implementation more efficient and effective. Consistent regulatory systems mean that different regulations enacted at the state level are not contradictory, overlapping, divergent and ever-changing (Principle 12). Strategies that can be deployed are co-ordinating regulatory policy and minimising the administrative burden of government formalities. Hidalgo's Development Plan contains provisions for a regulatory reform, which would include administrative simplification, professionalisation of public servants, transparent channels of communication and incentives for streamlining approval processes. This reform could greatly support the advancement of other pillars of the plan, once administrative processes and regulations would be made simpler and more consistent, facilitating state action.

Table 4.4. Selected OECD principles for effective public investment

OECD Principles for Effective Public Investment Across Levels of Government
2. Adopt effective instruments for co-ordinating across national and sub-national levels of government
3. Co-ordinate horizontally among sub-national governments to invest at the relevant scale
4. Assess upfront the long-term impacts and risks of public investment
10. Require sound and transparent financial management at all levels of government
12. Strive for quality and consistency in regulatory systems across levels of government

Source: OECD (2014[22]), *Effective Public Investment Across Levels of Government: Principles for Action*, https://www.oecd.org/effective-public-investment-toolkit/Effective-Public-Investment-Brochure.pdf.

Monitoring and evaluation of the State Development Plan

When it comes to the evaluation of policy effects, governments tend to make systematic attempts to measure the effects of the policies and adjust them for greater effectiveness, instead of waiting for them to have the desired consequences. Performance indicators play a central role in achieving such effective public policy by generating regular and objective feedback about progress towards policy objectives (Schumann, 2016[23]). They can promote learning and orient stakeholders towards results, by addressing information asymmetries that arise between levels of government or between government and stakeholders. They are also effective tools for reinforcing accountability at all levels of government by improving transparency. When carefully coupled with specific incentive mechanisms and realistic targets, indicators can stimulate and focus actors' efforts in critical areas. It can be used to promote a co-ordinated common long-term vision for the development of the state.

The State of Hidalgo has developed a planning instrument based on performance indicators to articulate, monitor and evaluate the implementation of the State Development Plan (SDP). This evaluation ultimately aims to follow up the performance of each secretary of the state in achieving the five axes in the SDP. The evaluation mechanism was formalised by the 2016 Law of Planning and Foresight, which is the legal framework for planning in the state. This law upgraded the status of the Secretary of Planning, Urban and Rural Development into a planning agency directly under the governor. Furthermore, the performance indicators must be linked with the budget plan of each secretary. In other words, the failure to meet the indicator would have an effect on the secretary's future budget.

Overall, this state initiative is welcome and represents an important step towards an efficient implementation and better policy outcomes for the state. Nonetheless, the performance indicator mechanism has issues with the conceptualisation and the construction of indicators as well as lack scope for co-ordination. Hidalgo should improve some aspects of the current performance indicators mechanism:

- **Limit, prioritise and add sense of temporality to indicators.** The lack of timeframe, the large number and the broad definition of the objectives in the State Development Plan (see former subsection) is mirrored at the level of the indicators. There are in total 245 indicators, with 88 indicators considered as priorities but without a clear hierarchical order or time-bound goals (e.g. until

2020). The wide range of indicators and their lack of prioritisation may lead to weaker monitoring and refocusing of public policies. For example, creating jobs is high in the priorities of the state. However, while some secretaries are implementing programmes related to job creation (i.e. creation of new touristic products), the outcome is not linked to a higher-level goal.

- **Avoid duplication and promote horizontal indicators**. Indicators do not have a sense of complementarity and transversality. For example, key challenges in the state such as informality do not have a co-ordinated horizontal indicator. The lack of complementarity reduces the scope for co-ordination within the government. Furthermore, it reduces clarity over the attribution of responsibilities of each secretary and the state government towards achieving multi-dimensional objectives. One example on this is the indicator of SEMARNAT that measures the share of state secretaries and educative institutions that have environmental programmes (the target for 2018 is 10% of institutions). The indicator measures the effort of the secretary in isolation, without any incentive for other secretaries to collaborate in this. Joint efforts from different secretaries in the design of transversal and common indicators can help mitigate duplication and incentivise co-operation.

- **Differentiate between input, output and outcome indicators**. Priority indicators must reflect outcomes rather than outputs.

  o Outcome indicators are arguably the most important indicators, as is the reason for implementing the policy in first place. They will monitor the specific objectives that the government wants to achieve, taking into account regional challenges, needs and potentials. If they are well designed, outcome indicators have several advantages over other monitoring techniques. They provide regular, timely and unambiguous feedback to policymakers. They can help policymakers change course if policies are not working, can foster learning and capacity building and create transparency and accountability (Schumann, 2016[23]).

  o Output indicators, instead, track the actions needed to achieve the specific objectives. Input indicators are a much lower level and track the functional and operative activities of the government. In Hidalgo, there are priority indicators such as the number of trees grown by the government or the number of new touristic products launched that are just measuring the number of products and services delivered by the government rather than the policy outcome (i.e. increase income in agriculture; increase income from tourism activities). Setting indicators that measure outcome is essential to monitor the ultimate policy impact and revaluate the strategies taken (Box 4.7).

- **Add benchmark and baseline values**. The current use of indicators in Hidalgo lacks a clear criterion on fulfilling objectives based on a benchmark with comparable regions, past objectives or a baseline value. Some objectives can be achieved by external causes or may be a consequence of an unintended effect. If the number of students in university increased in a certain year, it might not be related to any specific policy to support high-level education within the state. It can instead be associated with a particular national programme that finances education or migration pattern (i.e. natural disaster-related) from other states. If a degree of comparability with other Mexican states is established, a similar

increase of university students across all Mexican states might indicate the effect from a national programme.

Box 4.7. Example of a result policy chain in the European Union

The monitoring of the achievements of the 2014-20 European Cohesion Policy is based on specific indicators (common indicators), associated to the priority axis, category of regions (where relevant) and investment priority in each European Operational Programme. Each indicator has a baseline target to reach and is monitored during the entire programming period.

Figure 4.16 below shows an example of how an EU-funded project –in the field of early childhood education – would trigger (measurable) changes at different levels forming a "result chain". After the initial financial commitment and the activities implemented on the ground, it generates a direct output (in this example the number of textbooks distributed to the students and the teachers trained by the project), producing the intended outcome of the project (increasing school completion). The outcomes of multiple projects generate the overall policy impact (e.g. increased literacy).

Indicators associated with each stage of the chain should be carefully monitored and evaluated against suitable counterfactuals (what would have happened without the project/policy?). Monitoring and evaluation should be part of a gradual transparent evidence-based policy learning (Crescenzi, De Blasio and Giua, 2018[24]).

Figure 4.16. Example of result chain in the European Union
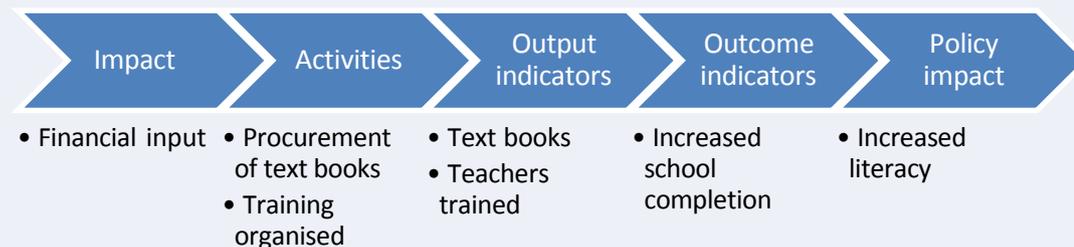
Sources: For figure: adapted from European Commission, EuropeAid - DEVCO 06 - Quality and Results; Crescenzi R., G. De Blasio and M. Giua (2018[24]), "Cohesion policy incentives for collaborative industrial research. The evaluation of a smart specialisation forerunner programme", https://doi.org/10.1080/00343404.2018.1502422; Crescenzi, R. (2018[25]), "Indicators for territorial public policy: the case of the European Union".

Equally important to the indicators is the fact that the information provided translates into policies. This requires a framework to regularly analyse the indicators, to communicate the insights to all relevant authorities and most importantly to act upon them. It should include clear strategies of how the secretaries can use the information from the indicators for learning and capacity building (Schumann, 2016[23]).

Hidalgo should consider prioritising a limited set of objectives and including lower level objectives in a hierarchical structure (several objectives contributing to achieving one higher-level objective). Outcome indicators should be assigned to the different levels of the hierarchical structure, where the indicators are set for the right level of hierarchy.

Therefore, the higher an indicator is located in the hierarchy, the more closely it monitors progress in achieving strategic goals. Overall, the state should take into account good practices for designing indicators stated in Box 4.8. The experience in Scotland can provide Hidalgo with a practical example to define and use indicators (Box 4.9).

An example from a good practice in Mexico is the MIDE (*Monitoreo de Indicadores de Desarrollo*) in Jalisco, an inter-institutional strategy that involves 34 local institutions and follows recommendations from the MIDE Citizen Council. It measures the progress of 298 indicators that have been ranked in 3 levels of priority (14 strategic, 118 sectorial and 166 complementary). Each indicator has been assigned to a specific government agency to implement and measure its progress and should be updated once a month. Indicators are also aligned with SDGs (Government of Jalisco, 2018[26]).

Box 4.8. Considerations for designing indicators

While indicators are always tailored to the outcome of the policy that they aim to monitor, there are some general considerations that should be taken into account when devising indicators:

- **Avoid the use of output measures for outcome indicators.**

- **Match the indicator to the objective and ensure it is responsive to policy**: Indicators should be influenced as little as possible by factors that lie outside of the policy objective.

- **Keep indicators consistent over time**: The full potential of indicators is realised only by analysing how they develop over time.

- **Use data that becomes available without long time lags:** Indicators need to be based on data that become available quickly and at a sufficiently high frequency.

- **Normalise indicators with appropriate denominators**: Indicators should convey as much information as possible in a single number. Usually, the aim is to express the indicator per unit of another variable or as a share of a larger category.

- **Minimise the cost of data collection:** The construction of an indicator should minimise the administrative burden and costs related to the collection and processing of data.

- **Design scoreboard indicators**: Scoreboard indicators are the highest level of outcome indicators. They serve communication purposes and are supposed to provide general overviews of the conditions in entire policy fields.

- **Choose between composite and unitary indicators for scoreboards:** Composite indicators that combine several measures into one indicator avoid the challenge of finding a single measure that contains all the relevant information in a scoreboard indicator.

Source: Schumann, A. (2016[23]), "Using Outcome Indicators to Improve Policies: Methods, Design Strategies and Implementation", http://dx.doi.org/10.1787/5jm5cgr8j532-en.

Box 4.9. Establishing strategic objectives and indicator outcomes in Scotland

In May 2007, the Government of Scotland set out to streamline government resources and improve overall territorial performance. To do so, it aligned the government around five strategic objectives – a Scotland that was wealthier and fairer, smarter, healthier, safer and stronger, and greener. From these 5 objectives, it established a series of 16 national outcomes articulating what Scotland wished to achieve over the subsequent 10 years. It then established a set of 50 indicators that cut across many of the national outcomes, helping decision-makers and policy designers identify policy complementarities, and helping citizens identify where progress could be made in more than 1 area. For instance, one national outcome was stated as: "our young people are successful learners, confident individuals, effective contributors and responsible citizens." It linked to 3 strategic objectives: smarter, healthier, wealthier and fairer; and had 15 associated qualitative and quantitative indicators.

These indicators were primarily outcome oriented and ranged from improving people's perception of their neighbourhood to reducing child deprivation. On its website, Scotland Performs, the government clearly communicated its strategic objectives and what it sought to achieve. It explained why each national outcome was important, the factors that could impact outcomes and the role of the government in achieving them. It also identified the related strategic objectives and the relevant national indicators.

The importance of each indicator was also explained on the website, as well as its current status, the indicator measure, what influenced change, the government's role, how Scotland was performing in the indicator over time, criteria for change, partners engaged in creating change, and any related strategic objective. These latter two points highlighted not only the different stakeholders engaged but also the multidimensionality and complementarity of measuring well-being and taking an integrated approach to policymaking. Scotland constantly monitored and continues to monitor its performance, updating its objectives and indicators accordingly. For example, in 2011 a national outcome relating to older people was added. With respect to the indicators, Scotland also adjusted these when necessary, some of the initial indicators remain untouched, others have had adjustments made to their definitions.

Over the subsequent years, Scotland Performs was transformed into the National Performance Framework, but the concept of establishing a vision, clearly establishing a strategy with associated outcomes and appropriate indicators, remains valid and accessible online.

Sources: The Scottish Government (2014[27]), *Scotland Performs*, www.scotland.gov.uk/About/Performance/scotPerforms (accessed 23 February 2016).

Improving governance co-ordination

The decentralisation reforms in Mexico have resulted in the transfer of competencies from the central government to subnational entities. As a result, the relationship among levels of government has been characterised by mutual dependence of policy responsibilities and outcomes among levels of government. It is a complex relationship, simultaneously vertical, across different levels of government; and horizontal, among the same level of government (Charbit, 2011[28]). For this reason, multi-level governance

co-ordination is a key ingredient to put in place an efficient territorial approach to development (OECD, 2014[35]) and requires that strong co-ordination mechanisms be adopted within and between levels of government.

Hidalgo and Mexico have long made great efforts to attain co-ordination. The state has made use of national and regional committees along with a strong political will to collaborate with the federal government and involve lower levels of government in the state development agenda. However, there is high municipal fragmentation (average of 34 388 inhabitants per municipality vs. 49 229 at the country average), with a lack of clarity on responsibilities and formal incentive to co-operate, thus creating challenges for effective co-ordination. This can be seen in the overlaps between environmental guidelines and housing projects in some municipalities (Chapter 3) or the low level of co-operation in strategic projects (i.e. tourism). In fiscal matters, the need for a system that allows investment co-ordination among local government and states is clear. To meet the state goals, the government of Hidalgo needs to identify ways to improve vertical dialogue with federal and local governments as well as inter-municipal and inter-state co-operation.

Improving vertical co-ordination with federal and municipal governments

Given the prominent role of the federal government in the delivery of public policy in Mexico, it is important for the states to reach the central government with a unified voice. Mexico and Hidalgo have various mechanisms, mainly fora, to support co-ordination among levels of government:

- The National Development Plan (NDP) is the main formal instrument for co-operation between the federal government and the state governments. It aims to prioritise and promote policy alignment across levels of government by gathering policy inputs from subnational governments and leading the state administration to draft its regional development plan in accordance with the guidelines set out in the NDP. However, inputs from subnational governments are integrated on a case-by-case basis and determined by political affiliations (Ugalde, 2014[29]). Differing electoral calendars also lead to mismatches when drafting the state plan.

- The National Conference of Governors (CONAGO) is a permanent forum that seeks to strengthen co-ordination among states and achieve a better balance of powers between the federal and state governments.

- The National Institute for Federalism and Municipal Development (INAFED) promotes the co-ordination of states and municipalities to strengthen the institutional capacities of the local public administration.

- The National System of Fiscal Co-operation is another forum that provides a platform for the Minister of Finance (SHCP) to meet state finance secretaries and discuss tax collection and other revenue-related issues.

For co-ordination inside the state, Hidalgo counts on committees and fora that carry out co-ordination mechanisms on a voluntary basis:

- The Committee of Planning for the Development of Hidalgo (COPLADEH) is in charge of co-ordination between the state and municipalities. Most of the federal investment funds are channelled through this institution. It is organised in sectoral

committees where local governments have a representative. Its main responsibilities are to:

- o Guarantee the consistency between the state and municipal development plans with the development plan at the national level.

- o Promote the participation of civil society within the planning, evaluation and implementation process of the State Development Plan.

- o Identify federal programmes and policies that need to be co-ordinated between government levels and evaluate the co-ordinated activities between federal and municipal government.

- The Committee of Planning for Municipal Development (COPLADEM) is in charge of co-ordinating the municipal development plan within the local governments (similar to COPLADEH but at the local level). It is a participatory platform for decision making between communities and municipal government. It also oversees the co-ordination with the state and federal level.

- The Institution for Municipal Development (INDEMUN) co-ordinates municipal governments with main responsibilities such as:

  - o Perform co-ordination activities with municipal governments.

  - o Establish monitoring systems to ensure the quality of services delivered by municipal governments.

  - o Support local governments with institutional capacity. To do so, it can collaborate with universities or other institutions.

- The recent Regulatory Improvement Law for the State of Hidalgo (LMR) and the National Commission on Regulatory Improvement (CONAMER) also provide a scope for co-ordination between levels of government (see next section). It contemplates the creation of co-ordination agreements among institution from different levels of government with the aim of improving the regulation policy. Reduction of administrative burden, training and knowledge exchange have been included.

Hidalgo has the Institute for Municipal Development of Hidalgo, a decentralised institution that aims to promote Hidalgo's Agenda for Municipalities (*La Agenda Municipalista Hidalguense*). This agenda has the goal of strengthening the capacities of municipal governments. It has been a vehicle to align state and municipal development approaches. In the same line, the Secretary of Economic Development (SEDECO) conducted a process to align the state and municipal economic development plans through 200 consultation fora where all 84 councils of the state participated. The final result of this exercise was congruency between state and municipal economic development plans.

The Agenda for Municipalities has also guided local governments to conduct an efficient public policy through capacity building. Under this framework, the state conducted a municipal diagnosis to determine opportunities at the local level. In a joint co-ordination between INDEMUN and BANOBRAS, Hidalgo implements the federal programme Bank of Municipal Projects (*Banco de Proyecto Municipales*). This programme finances and co-ordinates the evaluation of municipal infrastructure projects.

The pool of existent co-ordination mechanisms can, however, be better exploited. Empowering existing institutions and fora can improve co-ordination between the national and state level. Hidalgo should better use the institutions that bring together state policy-makers and national policy-makers and foster joint responsibilities for fiscal and development plans. Notably, to attain vertical co-ordination, the state should:

- Reproduce the existing technical steering groups for fiscal, health and security matters for other sectors such as transport or housing.

- Strengthen the State Governor's National Conference (CONAGO) with greater technical capacities in order to establish a better-articulated interaction with the federal government to negotiate broader political agreements. CONAGO can benefit from other experiences in OECD countries with co-ordinating institutions among levels of government, such as the Association of Regions of the Czech Republic (Box 4.10).

- Hidalgo would benefit from a greater use of the COPLADEH and COPLADEM to improve policy and investment co-ordination. These committees can be used as an active tool to better plan investments at the right size, co-ordinate the implementation, and benefit from economies of scale within the state, while maintaining a bottom-up approach thanks to the involvement of municipalities. The information about the outcomes from these committees is scattered and hard to follow over time. The state level should closely revise the active participation and outputs from the comities by establishing mechanisms to make public the results and decisions taken.

- Hidalgo can seize the CONAMER as a vehicle to promote efficient public service delivery at the state and municipal level. Alignment of government processes through the digitalisation of information and tasks will help to improve the quality of public administration.

The Mexican constitution also introduces the possibility of setting up contracts between the states and municipalities (Art. 115). The agreements can be designed to provide public services, execute and operate public works and formulate plans of urban development, territorial reserves and ecology. For example, the former Secretary Agriculture, Territorial and Urban Development (since 2016 divided between two secretaries) established an agreement with Mineral de la Reforma to directly deliver the subsidies assigned to the municipality from the Habitat Program. Hidalgo should make use of these agreements to conduct tasks so far unmet by municipalities such as the development of cadastres and urban and ecological plans (see section on fiscal revenues and Chapter 3).

The current co-ordination mechanisms are mainly based on voluntary agreement, mainly through fora, with a lack of formal instruments (i.e. in fiscal or budget) to incentivise co-operation (Government of Hidalgo, 2017[7]). Fiscal incentives are limited since transfer formulas or budget allocations are not defined on the basis of government co-ordination. Only municipalities inside metropolitan areas have a sort of fiscal incentives promoted by the budget allocation of the Metropolitan Fund. In this case, the state can benefit from performance indicators to formalise co-ordination since they are linked to budget efficiency. Hidalgo should hence build horizontal indicators that measure the level of co-ordination that secretaries undertake.

Box 4.10. Mechanisms for regional co-ordination in OECD countries

The governments of the German Länder co-operate through the Council of Prime Ministers and 19 subject-specific permanent conferences of ministers. The council/standing conferences are not part of the German government and cannot pass legislation. Nevertheless, they play an important role in the federal system. Councils have two primary functions:

- In policy fields where legislative powers reside with the Länder, they are the main forum for policy co-ordination across the Länder.

- In policy fields where Länder have limited powers, council/conference resolutions articulate common interests of the Länder to other actors, such as the federal government or the European Commission.

Co-operation in the council/conferences is consensus-based and most decisions are made unanimously. Formally, the Council of Prime Ministers and most other permanent conferences require the approval of 13 of the 16 German Länder to pass a resolution. Although resolutions are not legally binding, they have a strong symbolic power and are almost always enacted by Länder governments.

Some permanent conferences also draft model laws and regulations to support state administrations and to further harmonise laws across states. The Council of Prime Ministers convenes four times a year. After the council meetings, prime ministers meet with the German Chancellor. Subject-specific permanent conferences have their own meetings scheduled and tend to meet between one and four times a year. The federal minister in charge of the respective portfolio typically attends the meeting as an observer. Several permanent conferences have established additional committees to discuss particular topics in more detail. The administrative structure of permanent conferences varies depending on their responsibilities. Some permanent conferences have their own permanent secretariats with sizable staff numbers, while others use the administration of the state that holds the rotating presidency of the permanent conference.

The Association of Regions of the Czech Republic (AK CR) was founded in 2001 to represent the collective voice of the Czech regions. It associates the Czech Republic's 13 regions and the capital Prague. The supreme body of the AK CR is the council composed of the president of each region and the mayor of the capital, Prague. The association offers services ranging from representing regional interests in parliament, the cabinet and European institutions, to drawing up various reports, standpoints and initiatives. The council elects a chair and three vice chairs, and decides on setting up commissions. Commissions serve as advisors to the council. Current commissions include the Commission for Regional Development, the Commission for Public Administration, the Commission for Regional Financing, the Commission for Education, the Commission for Health Services, the Commission for the Environment and Agriculture, and the Commission for Transportation. Commission sessions serve for monitoring and issuing position papers/recommendations on major national and European issues in their area of competency. The council meets once every six to eight weeks on a rotating basis in one of the regions. External guests, from the central government administration, members of parliament, public organisations or international companies may also be invited to the meetings. The association has a small secretariat and is financed through membership fees.

Source: OECD (2014[30]), *Spain: From Administrative Reform to Continuous Improvement*, http://dx.doi.org/10.1787/9789264210592-en.

Improving horizontal co-ordination with other states and among municipalities

Given its small size, Hidalgo requires co-ordination with other Mexican states to have a bigger impact on policy decisions and better provide infrastructure projects. Furthermore, promoting co-ordination of investment and policies among municipalities can also help Hidalgo to reduce the cost of municipal fragmentation, which affects the quality of public services and limits the benefits of economies of scale in large projects, and influence productivity (Ahrend, 2014[31]). Such co-ordination will help to meet with a better provision of infrastructure and accessibility and cover the much-needed basic public services such as transport, education, and waste and water treatment.

Hidalgo lacks formal incentives for co-ordination among states and municipalities (Government of Hidalgo, 2017[7]). Instead, this type of co-ordination is done through a voluntary basis on fora committees. As for vertical co-ordination, Hidalgo has CONAGO as a mechanism to agree on joint projects among states. Other states in Mexico have benefited from this platform to conduct strategic collaborations. For example, the initiative for the development of the south-south-eastern region is based on high-level co-ordination of thematic projects between governors of the states in that region along with federal ministries. This initiative has conducted manifold projects: a plan to develop coffee areas across the states, engaging experts and universities to delimit zones and agree on cultivation process, the promotion of a joint package of tourism activities and the integration of road infrastructure projects across the states (Conferencia Nacional de Gobernadores, 2017[32]).

For co-ordination at the local level, the National Conference of Municipalities of Mexico (CONAMM) is a forum that aims to foster co-operation among Mexican municipalities and promotes policies under common objectives defined by the member municipalities (all 84 municipalities in Hidalgo are members). This association can bring together diverse stakeholders concerned with regional development and sets up agreements with national agencies to deliver services fitted to municipal needs. For example, this conference has conducted joint work with the National Institute for Education to train the workforce and illiterate populations within the member municipalities of this organisation. This was done through the use of regional level bodies, such as councils or agencies, and can provide strong support for designing, implementing and/or co-ordinating development policy efforts.

Experiences of co-ordination with adjacent states in the south have been positive due to Hidalgo's favourable proximity to Mexico City. The participation of Hidalgo within the Metropolitan Development Council of the Metropolitan Zone of Valle de Mexico has promoted joint projects such as the modernisation of the Pachuca-Federal district highway. Another example of co-ordination occurs within the Environmental Commission for the Megalopolis (CAME), which includes several states of the megalopolis around Mexico City (Mexico City, Mexico, Puebla, Tlaxcala, Morelos and Hidalgo) and the Ministry of Environment. This commission has implemented co-ordinated measures to tackle traffic and vehicle emissions in order to reduce pollution levels in the megalopolis. Hidalgo should seize the participation in both the Council and the CAME to develop projects and partnerships with positive impact in the state. The structure of CAME can also be developed with other federal ministries to cover topics of economic development and housing.

Hidalgo also has positive examples of co-ordination among municipalities within the state. This is the case of Water and Sewerage Commission of Intermunicipal Systems (CAASIM), which is an association among the municipalities belonging to Pachuca

Metropolitan Area with the objective to jointly provide drinking water, drainage and sewerage services. Following Principle 2 of the OECD Toolkit, Hidalgo should formalise and replicate the example of CAASIM for a co-ordinated delivery of other types of public services among different municipalities. A regional commission of this type for northern municipalities to provide water and electricity, among other things, can be beneficial for the development of this part of the state.

Hidalgo needs to benefit from greater co-ordination between the northern municipalities and their peers in Veracruz or San Luis Potosi. Co-operation on joint investments or on the delivery of public services can unlock the advantages of this geographic area. Municipalities like Huehuetla in the north of Hidalgo have long established links with the neighbour municipalities of Veracruz through either hospitals that provide services to inhabitants of both states or joint security strategies. The northern municipalities of Hidalgo are closer to the road network of Veracruz and ports in the Gulf of Mexico than to Arco Norte in the south of Hidalgo (Chapter 2).

- Hidalgo should benefit from the possibility of promoting inter-state collaboration within CONAGO to attain joint projects with Veracruz and San Luis Potosi. The example of the south-south-eastern region initiative can guide Hidalgo in this process.

- Particular projects among municipalities from different states can be developed by using CONAMM. It can follow former experience of this committee on collaborating with federal ministries to provide public services.

To formalise the co-ordination, the State of Hidalgo should explore the use of contracts and co-operative agreements that promote joint projects and investments among different municipalities or states. Contracts and co-operative agreements can promote greater co-operation among municipalities. Some countries find that contracts and co-operative agreements are of great value to help manage interdependencies and solve institutional weaknesses (Charbit and Michalun, 2009[40]). Contracts can clarify roles and responsibilities, establish clear accountability mechanisms, and ensure that all parties are working towards the same outcome. Hidalgo can implement these contracts by following experiences from the *Contract Project* in France or the *Vancouver Agreement* in Canada (Box 4.11).

Box 4.11. Contractual arrangements in France and Vancouver, Canada

France uses project contracts (*contrat de projet*) to bring together state (including European Structural Funds) and regional funding to finance projects that can help leverage other objectives (e.g. digital services, transitions to more environmentally friendly practices, etc.). Territorial contracts (*contrat de pays*) are also used to encourage a group of local authorities to undertake a development project, sometimes straddling or crossing administrative boundaries, thereby adapting to the functional space or space where people live. The project is directly prepared by the relevant area (group of local authorities) and the contract provides fiscal incentives to enterprises involved.

In **Vancouver, Canada**, the first Vancouver Agreement was signed for a five-year period in 2000 and renewed in 2005 until 2010. The scope of the Vancouver agreement was broad, with three main components: health and safety, economic and social development (including housing), and community capacity building. Its main objective was to promote

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co-operation between the three levels of government to address local issues of poverty, homelessness, substance abuse, safety and economic revitalisation, concentrating on Vancouver's Downtown Eastside. While the Vancouver Agreement was unfunded, it made use of existing mandates, authorities and programmes to finance initiatives. There was an agreement by each party to use funding available from existing federal, provincial and municipal programmes to finance projects and programmes and strategically focus a portion of those expenditures on agreed-upon activities.

Sources: Adapted from OECD (2006[33]), *Competitive Cities in the Global Economy*, http://dx.doi.org/10.1787/9789264027091-en; Vancouver Agreement (n.d.[34]), *The Agreement*, www.vancouveragreement.ca/the-agreement; OECD (2014[35]), *Effective Public Investment Across Levels of Government: Toolkit*, www.oecd.org/effective-publicinvestment-toolkit/.

Develop the civil service to improve public administration capacity

The public service in Hidalgo suffers from limited capacities, especially at the local level (Government of Hidalgo, 2017[7]). Moreover, every state and municipal election cycle is accompanied by a substantial overhaul of state and municipal civil servants. In smaller municipalities, low resources and poor facilities detract people to perform and deliver efficient policies. Low levels of capacity coupled with limited co-ordination across and between levels of government hamper the capacity of the state to benefit from synergies and policy complementarities.

The understaffing, retention and motivation of public servants is a challenge in the state. Hidalgo has adopted a policy approach of lean management, with reduction of staff in the search of modernisation. This measure can result in positive effects, yet it should be supported by the right strategy that acknowledges the operational challenges within the state. For example, lack of staff affects secretaries that are key to accomplish state goals, such as the case of the Secretary of Mobility and Transport or the Secretary of Environment in Hidalgo (see Chapter 3). These secretaries accomplish important tasks to meet state goals but they experience issues with staff retention and attraction of skilled workers. For many local governments, attraction and motivation of high performing people also remains a challenge.

The lean public service strategy should be accompanied by changes in how the public administration (and its agencies) operates. OECD analysis suggests that arbitrary staff cuts are generally restored within five to ten years if the public's demand for services is not reduced or if no change in the operational delivery modes is undertaken (OECD, 2011). If the reduction of staff is not supported by task complementarities among roles or better technology to provide public services, then the delivery of government services will be affected, as staff will be overworked. It will in turn reduce the ability of public organisations to achieve their organisational missions

Investment in developing a forward-looking management and planning can help Hidalgo to meet the changing needs of the public service. This is a much-needed tool in the face of tight budgets and lean management. It involves conducting workforce planning to anticipate possible future developments and maintaining a well-structured workforce of an appropriate size. One basic step for Hidalgo is to keep a record and database of the number of staff, promoting a better use of existing data at all levels of government to identify what it has. This is essential to track the number of employees, costs and competencies.

Hidalgo should strength the Institution for Municipal Development (INDEMUN), to increase training and capacities in local governments.

- This decentralised agency can conduct partnerships with universities and local governments to strengthen the institutional capacities of public servants in municipal governments.

- It can also enhance the certification mechanism of public servants. This mechanism is used by the state to boost quality in public service. The System of Municipal Professionalisation of Hidalgo promotes a certification programme that seeks to guarantee the training and professionalisation of public officials by incorporating technology for distance training. This policy is welcomed and Hidalgo should enhance it by supporting public servants to effectively access the technology and implementation of new learning methods.

Hidalgo can also implement strategies to transition towards a merit-based recruitment process for public sector workers. Politically-based recruitment decisions extend to senior management positions, further contributing to the absence of a career civil service in Mexican states (OECD, 2013[36]). The political environment, the lack of prospect for re-election in Hidalgo along with poorly competitive salaries may further prevent public authorities from attracting the best management talent. A merit-based recruitment system should ensure consideration of a candidate's educational background, competencies and experience and link qualifications to clearly articulated competencies required for the job. Hidalgo can benefit from examples from other countries such as Belgium where the tests for the selection of new civil servants is based on generic competency profiles (OECD, 2007[37]). Overall, Hidalgo may benefit by including some of the OECD recommendations developed for Mexico with regards to the professionalisation to the public workforce (Box 4.12).

Box 4.12. Key recommendations for professionalising the local public workforce in Mexico

The lack of professionalisation and the constant renewal of elected and appointed municipal authorities weaken the capacity of the public administration to promote appropriate urban development policies. Dealing with these challenges requires redesigning municipal administrations to make them suitable to a new context that requires a strong knowledge base and experience on the part of the workforce, as well as fairness and transparency in the management of public employees. To this end, it would be desirable to:

- Encourage merit and develop strategic workforce practices. This implies developing a merit-based recruitment process focused on competencies and through the development of standardised job profiles.

- Improve forward-looking management and planning. This involves engaging in strategic workforce planning to anticipate future developments and to maintain a well-structured workforce of appropriate size.

- Enact legislation for the professionalisation of the public workforce at the local and municipal level. The federal Professional Career Service could be used as a model.

- Make training more strategic, focusing on ongoing skill development, the

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- certification of competencies (i.e. those of urban planners) and the training of middle and senior managers.

- Create a body for the professionalisation of the workforce that could also promote teaching and research on urban development.

- Institutionalise collaboration across levels of government for professionalisation.

Sources: OECD (2015[4]), *OECD Territorial Reviews: Valle de México, Mexico*, https://doi.org/10.1787/9789 264245174-en; OECD (2011[381]), *Towards More Effective and Dynamic Public Management in Mexico*, http://dx.doi.org/10.1787/9789264116238-en.

Citizen engagement and accountability

Those who are the ultimate recipients of governance/policy – such as citizens, businesses and universities – need to be brought on board at the very beginning of the policy process (OECD, 2014[39]). These actors not only have inside knowledge about the effectiveness of a policy but have also the continuity that political bodies do not. Policymakers, citizens and relevant parties require clear information both in the short and long term.

Hidalgo has experienced various challenges regarding citizens' participation:

- In 2015, Hidalgo ranked as one of the eight states with the lowest ranking on activities and spaces for civic engagement (Government of Hidalgo, 2016[24]).

- In the same year, the Mexican Index of Access to Information (IADIM) ranked Hidalgo as the state with the lowest quality of laws in transparency, which refers to the institutional design and procedure to access public information.

- Some specific policies in Hidalgo have also failed in engaging with citizens. The cases of public discontent include the construction of TOZIBUS stations in the wholesale market of Pachuca or the development of housing projects in environmentally fragile areas and should yield lessons for the state to better raise awareness and communicate policies in advance to the community (see Chapter 2).

- Between 2013 and 2015, the number of acts of corruption in Hidalgo doubled (from 13 000 to 27 000), which placed the state as the 11th with the most corruption in the country (Government of Hidalgo, 2017[7]).

The state has acknowledged this situation and has set citizen participation as one of the strategic objectives of the State Development Plan. It aims to improve transparency and accountability to citizens and show citizens that spending is aligned with citizen priorities. Some of the recent actions to achieve this goal are:

- The creation of The Citizens Advisory Council of the State of Hidalgo (CCCEH), which is an independent institution that promotes the government-citizen dialogue. It works through five different platforms to analyse sectorial policies: social development, economic development, environmental management and sustainable development, security and justice, and governance.

- The creation of a citizen participatory budget, still at a first stage. This is a step forward that, if well managed, can improve efficiency in public spending.

- The public information of the indicators performance mechanisms with its goals and results is also a welcome method to communicate and engage citizens in implementation monitoring.

The Regulatory Improvement Law (LMR) also seeks to improve the link between citizens and government (see next section). This law aims to ease processes (for example permits and registries) and expand the dissemination of public information in the state. It also promotes a consultation process as an essential part for the policymaking process.

Citizen engagement is a critical component for building trust in government. This does not just refer to making public information available but also to encouraging active participation and constant consultation. Citizen engagement can be broken down into three categories: information, participation and consultation. Generally, participation is more challenging than information exchange or consultation, as it requires governments to share in agenda setting, to ensure that policy proposals are collaboratively generated and citizen needs are taken into account when making decisions (OECD, 2010[40]). Hidalgo should consider some of the practices of OECD countries to strengthen its citizen participation practices (Box 4.13). Notably, the state should:

- Involve citizens in the different co-ordination fora. A chair for a representative from civil society in COPLADEH, COPLADEM and INDEMUN.

- Create a formal co-ordination mechanism between the CCCEH and planning (COPLADEH) and implementing (state secretaries) actors.

Box 4.13. Methods for strengthening citizen participation practices in OECD countries

All levels of government face barriers to citizen engagement, and citizen participation can be particularly difficult although perhaps exceptionally rewarding when actively pursued. Tools for citizen participation include those described below.

Citizen Fora: provide a means to deliver policy proposals generated by citizens or their representative organisations (e.g. civil society organisations) directly to policymakers. In December 2006, thousands of current and former residents of New Orleans, Louisiana, were invited to an unprecedented Community Congress that took place at 21 meeting sites across the United States (half of the residents of New Orleans had not yet been able to return home). More than 2 500 people, representing the demographic diversity of pre-Katrina New Orleans, took part in the deliberative forum. Linked together by satellite and the Internet, residents struggled with the tough choices facing the city and articulated a set of collective priorities for rebuilding their home city. One month later, 1 300 people came back together to review a recovery plan that had been developed based on their priorities. Support for the plan was overwhelming; 92% of participants agreed that the plan should move forward. For the first time, community leaders had a public mandate to act. Building off this support, the city's recovery plan was soon approved by the city and the state and has begun to be implemented.

Citizen juries: allow a group of citizens – selected to reflect the general population – to question experts and offer recommendations after deliberation. The Department of Sustainability and Environment in Victoria, Australia, and the United States Environmental Protection Agency (EPA) have both established guidelines for citizen juries as part of larger citizen engagement toolkits. These are intended to involve citizens in a decision-making process. Citizens are generally selected at random or in a stratified

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way, and provided with a detailed brief of the issue at hand (i.e. a policy or project that has an impact across the community and where a representative or democratic decision-making process is required), its background and current thinking. They are then asked to discuss potential approaches and potential impact on the community. The jury might be presented with possible alternatives to consider and asked to judge which is the most desirable option for the community. They are asked to deliver a report, which could include recommendations for future action or directions. These juries can be used to broker a conflict or provide a transparent and non-politically aligned perspective to a matter. It is expected that the jurors add value based on their own knowledge and personal experience, and the juries provide an opportunity to build knowledge and exchange ideas.

Dialogue processes: enable governments to engage a large number of citizens directly in identifying needs and developing policy solutions. In 2008, Bilbao, Spain, launched a highly successful renewal project to transform from an industrial city to a service-based one. In addition to establishing a clear vision and an implementation plan sufficiently flexible that it could be changed if the situation warranted, it also had leadership that was committed to ensuring citizen participation when preparing and implementing policies and programmes. Public consultation opened the door for citizens to express their concerns and discuss potential solutions to the problems the city faced, including unemployment, slow economic growth, poor quality education, etc. This provided the city with an overview of citizen priorities and the issues and challenges that a plan had to address. The city was committed not only to speaking with citizens but also to listening. At the same time, citizens had to be willing to enter the conversation – this often required faith that they would be heard; that they would see themselves, their needs and hoped for benefits, reflected in project plans and outcomes. This is particularly sensitive and important at the subnational level, where actors often know each other, community interests and individual interests may not align, and outcomes directly impact individual households.

Consensus conferences: enable a panel of non-experts (with access to a range of experts) to discuss a complex issue over several days and report on their conclusions. In the mid-1980s, the Danish Board of Technology developed the consensus conference technique and used it until 2011. These conferences allowed citizens to provide informed input into technical and complex subjects. More than 20 consensus conferences were organised by the board, based on a standard model: about 16 randomly-selected "lay-persons" (non-experts) are invited to meet over a 4-day period around a pre-selected issue, first to hear experts' and policy officials' views, and then to deliberate among themselves. On the final day of the conference, they present their agreed upon or "consensus" views. A final document may be written by "lay" participants and is generally aimed at communicating with parliamentarians, other policy and decision makers, and also the general public. The Danish Board of Technology publishes these contributions in a series of reports and disseminates them to interested parties. These documents have contributed to informing politicians and policymakers on citizen views and attitudes towards new technology.

Citizen panels: assess public preferences and opinions, and are often used for assessing service needs and identifying local issues; they can be useful for engaging stakeholders with the development of new policy areas. In Bristol, England, 2 200 panellists reflecting the city's population were recruited through random sample and interviews to form the Bristol Citizens' Panel. The panel keeps the council informed about public opinion. Since its establishment in the late 1990s, the panel has been asked more than 600 questions on

topics ranging from recycling to changing the selection process for the city's mayor. Panel members receive up to four questionnaires annually, that they can compete on paper or electronically. Results from the panel enrich the decision-making process.

Participatory strategic planning: a consensus-building approach to help a community or an organisation articulate how they would like their community (or organisation) to develop over the next few years. This can be used to help a group agree on where they want to go and how they are going to get there. It is particularly useful to build a sense of ownership and commitment in a group and to build consensus. Participatory strategic planning was used by Ponders End, North London, to empower and enable residents and the communities to address local economic, social and environmental concerns, and improve their quality of life. This four-stage process served as a reference point for the Community Development Trust in its movement forward and helped the trust find and deliver a programme of community events and infrastructure based on the agreed plan.

User panels: regular meetings of service users. These panels help identify the concerns and priorities of service users and can help identify problems or generate ideas for improvement. These can be particularly helpful for constituencies whose voice is not usually heard (e.g. children, the elderly, etc.) and is a good way to establish a two-way dialogue between service providers and service users. Since 1992, Age Concern Scotland's Fife User Panels have provided an opportunity for the ageing population to influence the delivery of services that can help them maintain an independent lifestyle, for example, an enhanced cleaning service for home care clients and good practice for hospital discharge.

Sources: Adapted from OECD (2016[411]), *OECD Territorial Reviews: Córdoba, Argentina*, http://dx.doi.org/10.1787/9789264262201-en; OECD (2001[42]), *Citizens as Partners: Information, Consultation and Public Participation in Policy Making*, http://dx.doi.org/10.1787/9789264195561-en.

Improving regulatory policy and business environment in Hidalgo

Policies and institutions for regulatory improvement

National and sub-national governments issue regulatory instruments or regulations with the purpose of interacting with society to reach policy objectives. Regulatory policy strives for these instruments to be of public interest and provide net benefits to citizens and society. For regulatory policy to be successful, it is necessary to have a high-level political commitment with a comprehensive focus at all government levels, with the support of an institutional framework that allows its implementation and oversight (OECD, 2014[20]).

During the last years, the government of the State of Hidalgo has conducted a regulatory improvement policy, mainly through the elaboration of the Regulatory Improvement Law for the State of Hidalgo (LMR) (Government of Hidalgo, 2017[49]). While the law provides the creation of the institutional framework required for the implementation of regulatory policy, the corresponding institutions have not yet been set up, and the by-law (reglamento) for such law has not been issued. This hinders the potential of the regulatory improvement policy in the state and its municipalities.

Legal framework and legal instruments

According to Article 83 of the Political Constitution of the State of Hidalgo, regulatory improvement must be part of the state and municipal public policies (Government of Hidalgo, 2017[50]). Therefore, the Regulatory Improvement Law of the State of Hidalgo was issued in April 2017 (Government of Hidalgo, 2017[49]), which has as objectives the following:

- Promotion of government efficiency and effectiveness through the implementation of a State System of Regulatory Improvement.

- Creation of the State Catalogue of Formalities and Services.

The LMR provides the establishment of regulatory policy in the three branches of the state – the executive, legislative and judiciary branches – and is mandatory both for government agencies and autonomous bodies. It is worth mentioning that the LMR covers subjects such as administrative simplification, the use of the regulatory impact assessment to evaluate public policy proposals, and the creation of a catalogue with relevant information of the formalities (tramites) that can be performed in the state and the municipalities. Additional to the LMR, the State of Hidalgo has a set of legal instruments that influence the regulatory improvement policy. Such instruments are depicted in Figure 4.17.

Figure 4.17. Legal framework of the regulatory improvement policy in the State of Hidalgo
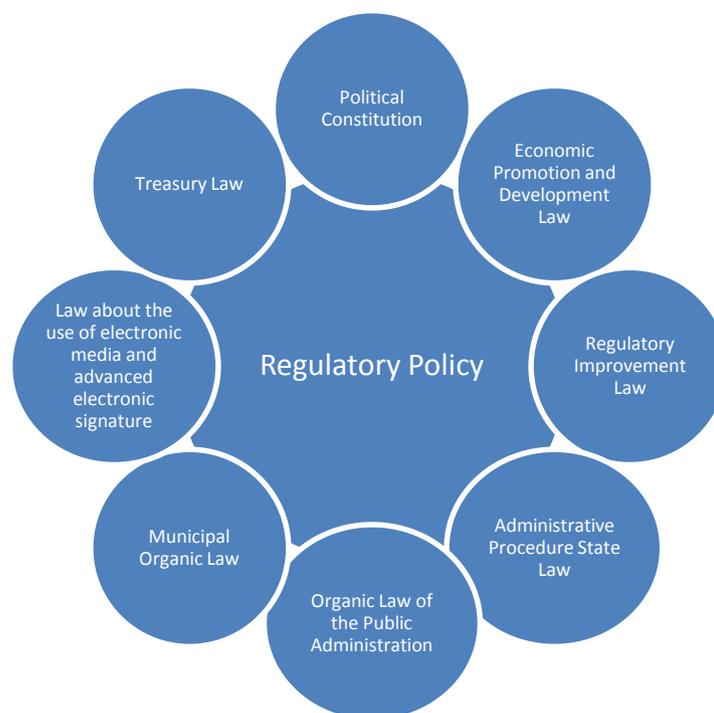
Source: Government of Hidalgo (n.d.[45]), *Biblioteca Legislativa*, http://www.congreso-hidalgo.gob.mx/biblioteca_legislativa/LEYES_VIGENTES/leyes_vigentes.html (accessed 5 May 2018).

As mentioned before, the scope of the law varies according to the state's branch. Most of the regulatory improvement responsibilities are located in the executive branch. However, it is necessary to complete the framework of legal instruments so that the application of

regulatory policy is effective, regardless of the government branch, such as the need to issue the reglamento of the LMR. Therefore, an analysis of the provisions of the regulatory improvement policy and the opportunity areas for each branch is needed.

Executive branch

The LMR sets forth the creation of a State System of Regulatory Improvement, which comprises the Regulatory Improvement State Council, the Regulatory Improvement State Commission and the Regulatory Improvement Municipal Commissions. The purpose of this system is to order, co-ordinate and systematise the actions required for the implementation of a policy of quality regulatory (Government of Hidalgo, 2017[49]).

The Regulatory Improvement State Council is the body in charge of co-ordinating the regulatory policy in the state and is composed by executive branch officers of the state, and representatives of educational institutions, the business sector and citizens. According to the LMR, the council must meet for sessions at least three times a year; nevertheless, since the council's creation, only one session has been held. In this context, it is worth mentioning that effective functioning of the council is an essential requirement in order to co-ordinate efforts in regulatory policy matters in the state.

Another body which is part of the State System of Regulatory Improvement is the Regulatory Improvement State Commission. This commission is an autonomous body of the state's Secretary of Economic Development (SEDECO) and has technical, operational and management autonomy. Additional to the co-ordination of the Regulatory Improvement State Programme, the commission is the agency in charge of co-ordinating the council (Government of Hidalgo, 2017[49]). Although the LMR provides the commission's competencies, it does not specify its composition.

Despite the fact that the Commission has not been created yet, SEDECO is making efforts to set up this body. Therefore, SEDECO has worked in defining the optimal institutional design for the commission. Even though the design and allocation of duties of each one of the commission's units are relevant, the state government should not overlook the capacity of the agency to reach its policy objectives. This implies that the resources aimed at the creation and operation of the Commission must be aligned with its functions.

Article 14 of the LMR lists the commission's duties, the most important of which include: development and monitoring of a system of indicators; revision of the state regulatory framework; promotion of rapid business start-up; among others (Government of Hidalgo, 2017[49]). With the purpose of complying with the abovementioned responsibilities, the commission must have sufficient financial and (trained) human resources, as well as the necessary tools so as to duly fulfil its mandate.

The third body participating in the Regulatory Improvement State System is the Regulatory Improvement Municipal Commissions. According to Article 71 of the Municipal Organic Law, each municipality must create a regulatory improvement commission (Government of Hidalgo, 2018[52]). However, up to the present, only 41 out of 84 municipalities in the state have one. Municipal commissions have the same powers as the State Commission, adjusted to their scope of authority.

Legislative branch

In regulatory improvement matters, the LMR states that the legislative branch must only review the regulatory impact assessments received as part of a regulatory project and

must carry out revisions of existing regulations, with the purpose of assessing if they are meeting the purposes for which they were issued.

In spite of the LMR clearly describing the legislative power's duties in this matter, the manner in which they should be carried out is not explicit. That is, the law does not provide the guidelines that the legislative branch must follow or the indications about the timing of regulatory revisions. Beyond that, the law also fails to indicate which body is in charge of co-ordinating, supervising and executing a quality regulatory policy in this branch.

Judiciary branch

According to the LMR, the judiciary branch must carry out four main actions: i) create a Regulatory Improvement Commission; ii) elaborate a statistical system for monitoring and evaluating business judicial procedures; iii) set a notification system for these procedures; and iv) commission a judicial information management system (Government of Hidalgo, 2017[49]).

The Regulatory Improvement Commission of the judicial branch was set up on 8 March 2018. Also, the judiciary branch is the only one of the three branches with clear guidelines about the duties and tools with which the commission must work. That is, the judiciary branch has the regulatory framework needed in order to develop a quality regulatory policy, as well as the body in charge of its execution.

Co-ordination among branches

The co-ordination between the state branches is provided for in the Joint General Agreement 1/2017. In the agreement, the plenum of the Superior Court of Justice of the State of Hidalgo, through the Regulatory Improvement Commission of the judiciary branch (CMRPJ) should co-ordinate with the state government's Regulatory Improvement Commission (CMR) in order to obtain training regarding regulatory quality tools and policies.

However, the CMR has not been set up yet and co-ordination is with SEDECO. The CMRPJ is currently working to fulfil the obligations set forth in the LMR. In this sense, it is recommended to set a collaborative work agenda with the state government's CMR so as to keep the transmission of knowledge, tools and training.

It is important to acknowledge that the State of Hidalgo has made good progress in regulatory policy. The LMR is a step in the right direction. However, without a reglamento and without the establishment of the oversight body in the executive and legislative branches, it will be difficult to take advantage of all the benefits resulting from a policy of regulatory quality.

Multi-level regulatory improvement policy

In most OECD countries, whether with federal or unitary systems, different government levels design and implement regulations according to their competency scope. One of the challenges for these systems is that regulation should be coherent in order to reach public policy objectives. Also, regulation must not create unnecessary administrative burdens. In order to overcome these challenges, the 2012 Recommendation of the OECD Council on Regulatory Policy and Governance (OECD, 2012[47]) recommends members countries implement formal co-ordination mechanisms between national and sub-national

governments. That is, the state must co-ordinate both with the national and municipal systems in order to improve the regulatory system

The LMR defines co-ordination between different government levels in Hidalgo. In practice, this co-ordination has become a reality in the federal and municipal scopes through collaboration agreements with the National Commission on Regulatory Improvement (CONAMER) and with most of the municipalities of the state. Also, the judiciary branch of the State of Hidalgo has established formal co-ordination mechanisms with CONAMER.

As one of its main policies, CONAMER regularly signs collaboration agreements with states and municipalities and the objectives are manifold: capacity building, diagnostics and recommendations, all aimed at improving the implementation and effectiveness of regulatory improvement policy at state level. The projects focused mainly on administrative simplification and reduction of burdens. These agreements take the form of formal signing of legal documents, and they become part of the outputs that CONAMER reports to the Federal Ministry of Economy and the Federal Ministry of Finance, as part of the federal system of the Matrix of Indicators of Results.

The executive branch of the State of Hidalgo has worked with CONAMER since 2013 in the Regulatory Improvement State Agenda, setup of Systems for Rapid Business Start-Up (SAREs) and reduction of administrative burdens (SIMPLIFICA project). However, a pending issue on the agenda is the use of tools to assess regulation in an ex ante and ex post basis.

Co-ordination agreements between institutions of different government levels are deemed appropriate to start a collaborative work. It is nonetheless desirable to prepare a work agenda for the short, medium and long run, and make it public, with specific objectives and goals. This agenda should include an implementation plan and should be prepared jointly by the federal and state level authorities. The purpose is for the work not to be affected by changes in the stakeholders with direct responsibility in the agreement. Having a well-defined agenda of work allows for a co-ordinated effort among different tasks such as continuous training, knowledge transfer, use of assessment tools and collaborative work to reach common goals.

The LMR currently binds the state and its municipalities to carry out a regulatory impact assessment that includes a regulatory coherence study. In order to achieve this objective, it is very important to choose an assessment instrument according to the capacities and needs of the state and the municipalities. The evaluation method must consider institutional capacities, such as human and financial resources. It is worth mentioning that the assessment instruments can evolve as the capacities and experience of officials increase. In this way, it is possible to use a low-complexity evaluation method in the first stages and increase such complexity as the officials gain experience. For instance, it can start with a qualitative analysis to evolve into a quantitative one.[2]

The state's work with the municipalities has focused on ordering and issuing information related to municipal formalities. In many cases, these formalities have been published on the State Catalogue of Administrative Formalities and Services (CETS) of the State Government's website. Another collaboration axis between the state and the municipality has been the installation of eight Systems for Rapid Business Start-Up (SAREs) that promote simplification of business setup processes in the most important municipalities of the state – Pachuca, Mineral de la Reforma, Tepeapulco, Tizayuca, Tula, Tepeji del Río, Tulancingo and Atitalaquia.

A very important exercise organised by the state with the municipalities is process analysis fora, which have been set up (at least for the time being) to improve processes and formalities required to obtain a construction permit. In these fora, SEDECO officials present to the representatives of municipalities and business owners of the sector an optimised process of the construction permit in order to achieve an agreement regarding its adoption – simplifying the current process of each municipality.

The objective is also to initiate a conversation about the main problems (in terms of schedule and obligations) faced by the citizens when attempting to obtain such permits. Despite the existence of these fora and the commitment expressed (at least informally) by the municipalities to adopt an optimised process, efforts have not materialised. It is recommended that these fora include an agenda with specific goals and entities responsible for their correct implementation, as well as the specific needs required for such purposes.

One of the main areas of opportunity in the municipal scope lies in the systematic lack of urban and metropolitan development plans. In the few cases in which they exist, they have not been updated (see chapter 3). This situation not only promotes disorderly growth of cities and urban areas, but can also produce discretion in the application of the regulation, as well as corruption opportunities and administrative burdens. An updated urban development plan is one of the priority actions that the state could foster with municipalities to improve regulation efficiency and effectiveness.

The State of Hidalgo has worked in building a regulatory policy from a multi-level perspective. However, these relevant efforts are seen as isolated examples. Due to this, designing a comprehensive strategy linked to regulatory policy is recommended, including co-ordination with different government levels. The document listing the strategy should be made public and include the policy objectives, as well as the work plan with other government levels. In order to improve multi-level co-ordination, the following objectives are considered as pending:

- Creating transactional electronic portals to manage state formalities and services, with links to municipal or federal ones.

- Connecting the state Public Registry and municipal cadastres to exchange digital information that will help to facilitate cadastral formalities.

- Implementing the federal government's electronic signature in state and municipal formalities to homologate processes and reduce administrative burdens, and facilitate access to digital formalities.

Administrative simplification

Administrative simplification is a dimension of regulatory policy seen in practically every OECD Recommendation of the Council on Regulatory Policy and Governance. The working field of administrative simplification covers identification of effectiveness and relevance of regulation to the way in which the government interacts with citizens or companies. This relationship can exist through specific formalities, information provision or public services, or the way in which existing regulation is implemented. The OECD recommends that regulations have a clear objective, with the minimum administrative burden. Thus the importance of carrying out *ex post* evaluations of regulation, publishing administrative formalities inventories and quantifying administrative burdens to implement a re-engineering of processes on government formalities and information

requirements using information technology and with the purpose of improving the regulatory framework.

The government of the State of Hidalgo has defined objectives related to administrative simplification in the State Development Plan 2016-22 (SDP); it has, for instance, provisions in the reduction of administrative burdens. It is nevertheless necessary to integrate such objectives into one agenda in the short, medium and long term, providing order and priority in the strategy. This agenda would help make it possible to provide a precise follow-up and evaluate the implementation of the simplification work.

The SDP recognises the value of regulatory improvement, as well as some of the positive effects related thereto. For example, it is recognised that efficiency and professionalisation of government officials, as well as quality in public services, are effects deriving from administrative simplification. It also includes a brief analysis with some indicators related to the regulation in force, such as the World Bank indicator on ease of doing business and the Regulatory Improvement State Ranking.

Regarding administrative simplification, the State of Hidalgo has carried out several actions which lead to the improvement of formalities' status. For example, they have started to measure administrative burdens through an agreement with CONAMER and have identified a set of 100 formalities with simplification priority. These actions are consistent with OECD recommendations; it remains, however, necessary to boost efforts by seeking a more comprehensive strategy on administrative simplification.

Administrative simplification strategy

Administrative simplification is an instrument to control the quality of regulation and is present in the agenda of most OECD member states because it identifies and reduces unnecessary costs generated by poor quality regulations. It is of major importance to identify the regulation that potentially goes beyond the policy objective since it can create entry barriers in the setup of businesses or limit access to public services.

Simplification strategy in the State of Hidalgo is based on the regulatory framework that was recently reformed, as mentioned in the section on policies and institutions. At first, the State of Hidalgo meets the obligation to uphold a policy of simplification of formalities established in the LMR (Government of Hidalgo, 2017[49]). Said law includes the incorporation of electronic means for exchanging information in administrative formalities, including the substitution of handwritten signatures for digital means.

Nonetheless, the strategy takes greater shape through the objectives incorporated in the SDP and the sectorial plans of SEDECO. For instance, the SDP provides administrative simplification goals: on the percentage of simplified formalities for 2022 (50%) and 2030 (70%); or regarding the percentage of formalities and services offered in digital format or remotely for 2022 (25%) and 2030 (50%) (Table 4.5). These goals are relevant to evaluate the progress of the administrative simplification objectives. Nevertheless, it is recommended to assess the actions in order to identify if they have effectively reached the underlying objectives.

Table 4.5. Percentage of formalities and services of transactional type offered online in the state public administration

	Reference Base Value	Goal	Goal
Year	2015	2022	2030
Value	8.6	25.0	50.0

Note: State Development Plan, Axis 1: Honest, close, and modern government. State estimation that expresses the percentage of formalities and public services offered in internet in the state public administration and which allow carrying out and/or following up on associated formalities and payments "online" (without needing to visit a public administration office).
Source: INEGI (2017[48]), *Encuesta Nacional de Calidad e Impacto Gubernamental (ENCIG) 2017* [*National Survey of Governmental Quality and Impact (ENCIG) 2017*], http://www.beta.inegi.org.mx/proyectos/enchogares/regulares/encig/2017/ (accessed on 15 May 2018).

It is worth mentioning that SEDECO has goals defined regarding different projects related to administrative simplification, such as the investment gateway, inventory of formalities, etc. These projects should have a thorough follow-up through management indicators that support decision-making.

Formalities and services

The state government has signed a collaboration agreement with CONAMER for burden measurement and simplification of formalities (SIMPLIFICA). This project's purpose is to identify opportunity areas in formats and templates. It also aims to disentangle the process through which the state's formalities are managed, and in such a way, reduce administrative burdens for citizens and business owners.

When elaborating this report, the initial diagnosis of the SIMPLIFICA project had been carried out, which identified 850 active formalities in the State Catalogue of Formalities and Services (CETS), 730 of which are in force. 82% of the formalities are made in person and CETS presents their basic information. 15% can be started on line and be concluded at a government office, and 3% can be made completely on line (CETS website: www.ruts.hidalgo.gob.mx). To date, the portal lists some formalities from specific municipalities, but only of an informative nature.

From the total amount of formalities incorporated into the analysis of the SIMPLIFICA project, 57 were considered a priority but there are plans to simplify 760 formalities and digitalise them by November 2018, in view of administrative simplification.

The construction of a formalities and services portal with legal foundations and standardised, updated, concise information in the citizen's language is crucial to start any regulatory improvement action. In virtue of this, it is important for CETS to be comprehensive and dynamic. However, in order to continuously incorporate information, an institution in charge of CETS, with a real capacity to oversee the quality and relevance of information, will be required.

In parallel, the state government has identified 100 formalities susceptible to be digitised. This group of formalities was proposed based on its ability to raise funds for the government.[3] However, criteria that identified administrative burdens or citizens' suggestions– as can be provided by the SIMPLIFICA project – were not taken into consideration. It is important to prioritise the simplification of formalities based on objective indicators and taking the view of citizens into account, that is to say in accordance with the total administrative burdens of each formality. The widely employed

methodology of the Standard Cost Model can help to measure administrative burdens (see Box 4.14).

Box 4.14. Standard Cost Model (SCM)

The SCM methodology is an activity-based measurement of businesses' administrative burdens, making it possible to follow the development of administrative burdens. At the same time, the results from the SCM measurements are directly applicable to governments' simplification work, as its outcome shows the specific regulation that is especially burdensome for businesses. The SCM goes beyond defining the cost of formalities as the fees paid by users. Instead, it allows for the calculation of administrative burdens by considering the time and money that citizens and business allocate to comply with the formality.

The SCM breaks down formalities into a range of manageable components that can be measured while focusing on the administrative activities that must be undertaken in order to comply with regulations. SCM measurements highlight the existence of areas of regulation suitable for administrative burden reductions. Given the action-oriented nature of SCM results, it provides a crucial baseline and source of ideas for simplification opportunities.

The adoption of the SCM in the simplification process has several advantages:

- It draws attention to the specific parts of the legislation that are most burdensome for businesses' compliance as well as identifying the total costs of administrative burdens.

- A baseline measurement reveals where administrative costs occur in business processes, highlighting where the greatest effect of simplification can be achieved.

- The classification of the causes for the administrative burdens and the identification of which department/ministry is responsible for burdensome regulation allows to target the simplification efforts.

- Collected information enables to simulate how changes or amendments in the regulation may impact on the costs faced by stakeholders.

- The SCM may also stimulate the share of data between government agencies.

According to the SCM, there are three types of costs that businesses face due to the regulation: direct financial costs (fees), long-term structural costs and compliance costs. The latter is the cost category that the SCM focuses on. Within this category, the SCM takes into account the administrative costs of complying with the regulation which only emerges because of the regulatory burden.

The calculation of these costs is constructed through the monetisation of all the resources directed towards the development of information that is to be handed to the regulatory authorities.

The structure of the SCM is as follows:

Figure 4.18. The structure of the Standard Cost Model
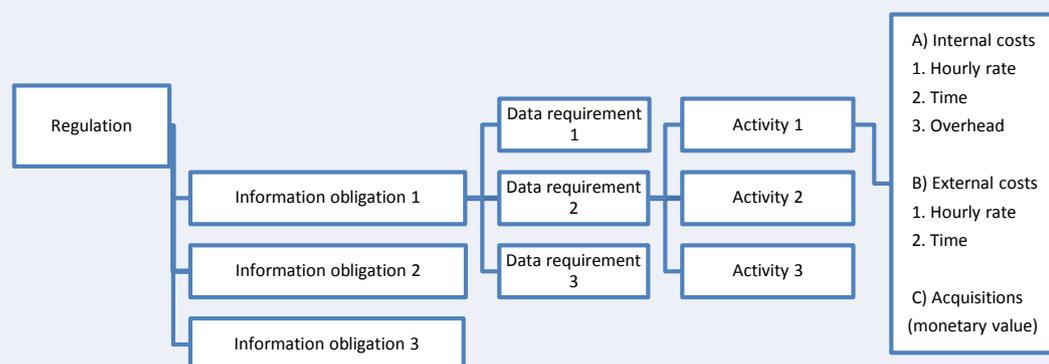
Source: SCM Network (n.d.[49]), *International Standard Cost Model Manual: Measuring and Reducing Administrative Burdens for Business*, http://www.oecd.org/gov/regulatory-policy/34227698.pdf.

The digitalisation of the formalities should be considered as a re-engineering of the entire process to eliminate unnecessary or duplicate steps. The digitisation process should also be planned to incorporate tools to make online payments and adopt an electronic signature in two ways (citizens and official). On this objective, it is important to establish a specific agenda that allows locating priorities and execution times.

An example of the digitisation process in the Ministry of Environment and Natural Resources of Hidalgo is the Environmental Impact Assessment (MIA), which aims to reduce the response times from three to one month and eliminate five of the requirements that are currently requested. The Ministry of Environment is currently considering the use of a platform with georeferencing able to locate the associated properties in real time as part of the MIA process.

The state also plans to work with municipalities to digitise formalities associated with business start-ups and construction permits. Nevertheless, SEDECO faces challenges in allocating resources for these purposes, as it needs to lobby for resources with the State Ministry of Finance or with federal agencies. To expedite this objective, some alternatives have been identified, such as the participation of external developers. In this case, it is very important that property rights over computer systems are properly defined; as well as participation schemes, in order to ensure their continuous updating, validity and technical and financial maintenance.

One-stop shops

The government of the State of Hidalgo is developing the website www.investhidalgo.mx, with information focused on potential investors in the state. Its main strengths include the following:

- The website allows to establish communication between investors and specialised officials of the state government. In this way, the government follows up on the information needs and specific requirements.

- Some of the information that is provided is related to the potential formalities that the investor should fulfil in the three government levels.

- Additionally, it provides information on main industries settled in the states, and on industrial and high-tech parks in which new companies can operate.

This website is under development and its main areas of improvement are:

- Currently, it contains basic information on formalities (a map with generic priorities), sectoral and infrastructure data. However, to take advantage of its potential, it should be linked to the CETS to allow consultation of specific information on each formality. This could turn into a link to digital formalities at a later stage.

- It is also advisable to include statistical information that can be downloaded and analysed, since currently only basic information without interactive capacity is presented (see Box 4.15 for an international example).

The website can be a good starting point for an administrative simplification strategy. Nevertheless, as mentioned previously, it should also be able to offer more detailed information and be coupled with a strategy of digital formalities.

At the municipal level, there are one-stop shops to carry out formalities related to business start-ups. Particularly, in the municipality of Pachuca de Soto (capital of the state), the SARE is in operation, which can issue a license in 48 hours. However, this office has a limited spectrum of business formalities, so it is recommended to keep incorporating business and citizen formalities continuously

In the State of Hidalgo, no overarching strategy of administrative simplification has been observed but several actions give the impression of being separated, although there is convergence in actions and formalities. For example; there are efforts to identify the 100 priority formalities, along with the 55 formalities that the SIMPLIFICA project identifies, and other efforts through the one-stop shops or electronic websites. It is advisable to integrate all efforts to have a comprehensive strategy and avoid duplication or working on low priority issues.

Box 4.15. Website of formalities in Australia

The Government of Australia, through its websites, has encouraged the reduction of administrative burdens for businesses and citizens. The websites australia.gov.au, business.gov.au and my.gov.au are the main sites where you can find the information necessary to carry out formalities focused on business start-ups and some government services. These websites are linked and make up a one-stop shop of formalities and services, which allows for interaction between citizens and authorities.

The website australia.gov.au is the main government website. It is organised based on life events and provides information on all the services provided by the government. In particular, it has a section dedicated to business and industry where useful links are found to specialised information according to the needs of the users.

The business.gov.au website focuses specifically on the three stages that a business follows: creation, operation and closure. This site has reference information, provides the current legal framework and allows the execution of relevant formalities for business. For example, it is possible to register a business and obtain the identification code of the business, find disaggregated information according to the type and direction of the business, know the process to follow in case of bankruptcy of the business and obtain specific information according to the physical location of the business.

Finally, my.gov.au brings together some of the services offered by the government. On this site, users can digitally access services such as employment exchanges, medical records and tax collection, among others. In addition, notifications can be received from the institutions in charge and it allows users to modify their contact information. Particularly, MyGov offers the option of linking several Australian Business Numbers so that entrepreneurs can have centralised access to a variety of sites of interest to entrepreneurs.

Sources: Australian Government (n.d.[50]) *Australian Government*, https://www.australia.gov.au/ (accessed on 14 May 2018); Australian Government (n.d.[51]), *Business*, https://www.business.gov.au/ (accessed on 14 May 2018), Australian Government (n.d.[52]), *myGov*, https://my.gov.au/LoginServices/main/login?execution=e1s1 (accessed on 14 May 2018).

Ex ante *regulatory impact assessment*

The OECD recommends integrating a Regulatory Impact Assessment (RIA) in the first design stages of public policies that require new regulatory instruments (OECD, 2012[47]). The RIA is a tool that allows making decisions based on an analytic, systematised and transparent process and is usually presented as a report along with the regulatory proposal.

The LMR states the obligation of applying a regulatory impact evaluation, which can be of *ex ante* nature, that is previous to the regulation's issuance and that in the OECD countries is known as Regulatory Impact Analysis (RIA); or of *ex post* orientation, which is used to assess the regulation's effectiveness after it has been implemented. The *ex ante* analysis referred to by the LMR is aligned with international practices. The LMR mentions the elements that this evaluation should include:

- Analysis of the problem at the origin of the regulation and its objectives.

- Analysis of regulatory and non-regulatory alternatives.

- Analysis of costs and benefits of the regulatory proposal for the affected groups.

- Analysis of implementation mechanisms and capacities.

- Mechanisms, methodologies and indicators used to evaluate the regulation's objectives.

- Description of the consultation processes carried out.

Despite the compulsory nature of the application of *ex ante* analysis at a legal level, the state's government has not yet concluded the implementation of the tool. In fact, the lack of the *reglamento* for the LMR and the delay in the creation of the CMR can limit or reduce the capacity to adopt a RIA model. This is due to the fact that the *reglamento* is supposed to define the scope of the law and offer provisions for the functioning of the RIA system. Also, for a RIA system to be effective, proper oversight is needed, and this is where the role of the CMR is important. On the other hand, it is worth mentioning that the availability of specialised human resources is fundamental to reach the objectives and goals of this tool. See Box 4.16 for an international example of the application of *ex ante* assessment of draft regulation by a sub-national government.

Box 4.16. The use of regulatory impact assessment in British Columbia, Canada

The Ministry of Small Business and Red Tape Reduction, which in June 2016 was in charge of the regulatory reform in British Columbia province, proposed a policy that allows reducing the regulatory burdens that citizens and businesses face to a minimum. Such policies sought that reforms and new regulations along with their formats would not produce an excessive burden on citizens, but protect public health, safety and environment. To reduce to a minimum the effects of the regulation on citizens and businesses, five principles were established which must be considered to elaborate or to modify a regulation:

- Identify the best option.

- Evaluate the impact on citizens, businesses and public administration.

- Consult and communicate.

- Make the design more efficient.

- Evaluate the effectiveness of the regulation.

To fulfil this policy, the government provides assistance in how to minimise the regulatory impacts due to changes in bylaws, regulations, policies and procedures. For instance, the ministries that try to issue legislative proposals that must go through the Executive Council's revision must start the Request for Legislation Process that includes a checklist (or a statement to request exemption from the presentation of such list) and a document that quantifies administrative burdens. Such a verification list is a simplified RIA which is also used in the issuance of other types of legislation such as the Orders in Council.

Source: Government of British Columbia (n.d.[53]), *Regulatory Reform Policy*, https://www2.gov.bc.ca/gov/content/governments/about-the-bc-government/regulatory-reform/resources (accessed on 16 May 2018).

The strategy in the implementation of the RIA must be consistent. That is, the instrument (type of report) selected must be chosen according to the flow of the regulation that is issued annually and the financial and human capacities of the government. A common practice that may create obstacles in the adoption process of the RIA (at least in the early stages) is to set the most advanced practice at the national level as a standard, for example, to establish RIAs of high and moderate impact, in which the former must have a monetised cost-benefit analysis. National systems usually have several years of experience and more financial and human resources; for this reason, starting the exercise at the sub-national level with these templates and standards can impose goals with little feasibility of being reached or even reduce the quality of the analysis. Failure to achieve the goals runs the risk of generating a misperception about the capacity of the tool, and it may gradually lead to disuse of the tool or become only part of a bureaucratic step with no policy assessment whatsoever.

Regardless of the instrument (RIA report) selected, it is important to implement it gradually, ideally with a pilot programme that involves the institutions that could have the most resources. It is important to remember that the implementation of the RIA requires trained human resources; not only in the CMR where the regulatory projects will be reviewed but in each institution that issues regulations. For this reason, it is necessary to implement a continuous and permanent training programme, since the movements in personnel affect the institutional capacity.

Other regulatory improvement tools

The OECD recommends the use and adoption of diverse tools to improve the regulatory quality such as RIA or the administrative simplification (OECD, 2012[47]), which have already been analysed in the previous sections. However, there are other instruments which are complementary and contribute to improving regulation quality. These are public consultation, *ex post* evaluations and management of the stock of regulation. The activities carried out by of the State of Hidalgo in each one of them are described below, as well as the main strengths and opportunity areas.

Public consultation

The OECD recommends involving the stakeholders in the process of creation and issuance of regulation, since this practice has shown to have positive effects in improving the quality of regulation (OECD, 2012[47]). On the one hand, the consultation processes improve transparency, efficiency and effectiveness of the regulation. The consultation also allows in the first stages of policy development the dissemination of government plans and learning the different points of view about the regulatory proposal and the potential impacts. On the other hand, consultation is a process that allows the identification of benefits or impacts that could have gone unnoticed.

There are different arrangements, stages and objectives for a consultation process. For instance, early consultation is very important to define the public policy issue; on the other hand, public consultation at later stages is relevant to adjust or improve a specific regulatory proposal.

In Hidalgo, consultation processes are indicated in the LMR. First of all, the consultation process is indicated as one of the elements that should contain the regulatory impact assessment (Art. 30, LMR) which is attached to the regulatory proposals; besides, it points out that the implementation of an impact assessment should assist consultation processes.

The LMR also indicates that the CMR and the municipal commissions are responsible for making the regulatory impact assessments public (Art. 33), in order to collect public opinions and comments. This practice is similar to what can be observed nationwide where CONAMER is the entity that provides a platform to carry out consultation processes, and similar to various OECD countries such as the United States and the United Kingdom.

The consultations process is also indicated in the LMR to implement simplification actions carried out by the state government (Art. 57 LMR) and gives powers to the CMR and municipal commissions to promote the elaboration of annual programmes based on public consultation (Art. 44 LMR). In fact, one of the first exercises of public consultation was carried out for the elaboration of state and municipal economic development plans. This process included a total of 200 consultation fora for 84 town councils. The finished plans included follow-up indicators and were authorised by the Hidalgo State Congress.

Another exercise is headed by the SEDECO to simplify processes related to construction permits (for constructions over 1 500 m²) in municipalities of the state. The SEDECO, the personnel in charge of municipal construction permits and business representatives participate in this exercise.

The consultation processes in Hidalgo have a basic legal framework and some exercises in this matter have been made. However, it is very important to establish this practice in a systematic fashion, maintaining standardised quality levels. For such a purpose, it is necessary to issue the LMR's *reglamento* and operation manuals for consultation programmes so the state and municipal commissions can exercise their faculties more efficiently. For instance, the LMR indicates that the commissions should publish the regulatory projects with an impact assessment to collect comments. However, the *reglamento* must set guidelines about the use of information technologies, sanctions over law breaching, etc. On the other hand, the *reglamento* can provide more information about how and in which cases it is a priority to implement early consultation processes.

Ex post *assessment of regulation*

Once regulations have been implemented, their assessment has the purpose to determine if the foreseen effects were reached. In this way, the *ex post* evaluation's purpose is to analyse the relevance, efficiency and effects of the regulatory decisions, including undesired results, causes of failure or elements that had contributed to its success. Ideally, these evaluations start from the intensive use of reliable and precise statistical information. Nevertheless, it is possible to start the assessment exercise with qualitative techniques.

In the State of Hidalgo, there is a reference to the *ex post* regulatory impact assessment in Article 27 of the LMR (where the use of RIA is provided too). This article mentions that the obligated subjects will adopt review schemes about existing regulations. Article 38 mentions that those regulations issued in the official gazette and that generate compliance costs for businesses must be analysed 5 years after to determine their application effects.

In practice, the five-year term, defined since the publication of the LMR, has not been fulfilled and therefore there have not been evaluations regarding this rule. Additionally, there is no evidence of *ex post* evaluations as part of the process of reviewing the inventory of regulations.

Management of the stock of regulations

The recommendation of the OECD Council on Regulatory Policy fosters systematic review to ensure regulations comply with the public policy goals for which they were designed (OECD, 2012[47]). These inventory reviews do not only refer to *ex post* evaluations but also include identification and elimination of regulations that are not applied, that generate duplicities or that do not have a current goal.

Regarding this subject, the LMR provides in Article 43 that the CMR and the municipal commissions can suggest to the regulated entities the modification or elimination of regulations, according to state and municipal programme objectives.

One of the first steps to review the regulatory inventory is the identification and publication of the complete body of regulations. The LMR (Art. 20) obliges the CMR and the commissions to elaborate the electronic inventory of the regulation in force. However, this obligation has not been met. One of the reasons for not having this inventory completed is that the CMR has not been created and there is no specific agency responsible for this project.

There are existing regulation inventories which are administrated by the judicial and legislative branches in the State of Hidalgo. Nevertheless, the corresponding websites (www.pjhidalgo.gob.mx/transparencia/leyes_reglamentos/leyes.html and http://www.congreso-hidalgo.gob.mx/biblioteca_legislativa.html) do not have the full inventory at the state and municipal levels. For instance, at state level, primary laws are include but subordinate regulations are not published systematically. Additionally, these websites do not include information on local level regulations, such as municipal by-laws (*reglamentos*) or municipal ordinances (*bandos*).

Another dimension of the regulatory inventory reviews refers to the inventory of formalities. Currently, the formalities' inventory is in the construction process and is mainly informative www.ruts-hidalgo.gob.mx. In this case, it is necessary to work with the integration of municipal procedures.

Considering that the inventory websites of regulations and formalities are incomplete, reviews of the regulatory stock can have limited effects. Thus, it is of high priority to set up the CMR so it can work and finish the construction of the regulatory inventory and of the registration of procedures. In any case, there is currently no evidence of a systematic effort to build an inventory of regulations with the goal to simplify and improve the quality of the legal framework.

Business environment

The OECD recommends that in order to improve the business environment at a subnational level, governments must support the implementation of policies and programmes on better regulation, with the purpose of reducing costs and barriers that limit competition and investment (OECD, 2012[54]). This does not only imply the simplification of formalities related to businesses opening and operation, but also the use of more effective strategies for the compliance and enforcement of regulations.

Hidalgo's SDP recognises that the business environment improvement implies:

- Simplification and harmonisation of the regulatory framework.
- Use of electronic means for the simplification of procedures.
- Improvement of SARE and one-stop shops.

- Creation of a catalogue of formalities and services.

- Risk-approach-based inspections.

These actions are expected to streamline regulations, formalities and government requirements for businesses to start and operate, hence contributing to more economic activity.

In the State of Hidalgo, the average time for an entrepreneur to obtain a business license is 29.5 days. A possible cause that may contribute to this rather long period of time may be the inconsistency between the information published in official websites and the information provided in the government offices granting the licenses. The state government is undertaking actions to simplify the business license, with the target of issuing licenses in 9.5 days.

Another important procedure to improve the business environment is linked to construction permits. While SEDECO works to simplify and harmonise such permits in the municipalities through specialised fora, information technologies must be adopted to boost the simplification benefits. SEDECO has already designed a streamlined process for construction permits and promotes its implementation at a municipal level. Despite that, in such fora, an explicit commitment from most of the representatives from the municipalities has been made to adopt the streamlined process, no specific actions have materialised to implement the simplified process.

issuance of construction licenses. Currently, the process to obtain a construction permit According to representatives from the construction sector, there are no harmonised criteria for the takes 107 days in the Municipality of Pachuca de Soto, the state's capital, and the government goal is 4 days for permits under 1 500 m² with only 1 information requirement. This objective is ambitious, and an agenda with specific activities and timelines is required. See Box 4.17 for an example of a sub-national government in Mexico which established and implemented a plan to improve the business environment.

According to the Government of Hidalgo, the Council of Regulatory Improvement approved 3 simplified processes to be adopted in 84 municipalities. The processes are a three-day business setup, a seven-day construction license and a seven-day simplified municipal authorisation to develop infrastructure in telecom. Thus, in the coming months, the government will work on the implementation of such models.

Box 4.17. Simplification of formalities of high impact on business activity in Merida, Mexico

On November 2016, the OECD and the Municipality of Merida signed a co-operation agreement aimed at enhancing the business environment through the simplification of formalities of high impact on business activity in Merida.

On June 2017, the OECD provided the Municipality of Merida with 235 recommendations for improving business licences and construction permits. Recommendations for promoting regulatory transparency and increasing the efficiency of formalities were also included. The recommendations were based on national and international good practices for the simplification of municipal formalities available in the *OECD Guide to Improve the Regulatory Quality of State and Municipal Formalities and to Enhance Mexico's Competitiveness*.

The recommendations included an implementation plan with milestones, an office responsible for each action and milestone, a co-ordinating office, critical path and timeframes to reach each milestone. In order to meet the recommendations, the Mayor of Merida nominated the Deputy Directorate of Regulatory Improvement as project leader, and official contact points for each of the 14 agencies in charge of the recommendations were appointed. In this way, a group of about 70 people was created, working for almost 18 months to comply with OECD's recommendations.

On 22 March 2018, the OECD released its third and final evaluation of Merida's implementation of the recommendations. Merida reached full implementation of all the recommendations under objective and verifiable criteria.

The main achievements of the project were:

- The online one-stop shop *abretuempresa* was created, which allows submitting and managing formalities online to start a company or obtain construction permits, using the electronic signature of the Tax Administration Authority.

- *Abretuempresa* includes a "risk-map", in order to identify areas of risk of flooding for instance.

- The approval of the Civil Protection Programme for businesses was implemented on line, and the response time reduced to ten business days.

- The New Civil Protection Regulation was approved and published.

- An application was created for the inspection process for new constructions, reducing burdens for citizens and inspectors.

- The online Municipal Registry of Formalities and Services was established as the single source for all government offices when providing information.

Source: OECD (2018[611]), (accessed 1 September 2018).http://www.oecd.org/gov/regulatory-policy/merida-implements-100-the-recommendations-to-improve-high-impact-formalities.htm

Notes

[1] The nine OECD federal countries at 2018 refer to Australia, Austria, Belgium, Canada, Germany, Mexico, Spain, Switzerland and the United States.

[2] See, for instance, the regulatory criteria checklist of the government of British Columbia, Canada, https://www2.gov.bc.ca/gov/content/governments/about-the-bc-government/regulatory-reform/additional-information (accessed 30 August 2018).

[3] Some of the formalities are: new license to drive vehicles, exchange of driver's licenses, issuance of no criminal record certificate, registration to the suppliers' registry.

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OECD Territorial Reviews

HIDALGO, MEXICO

Hidalgo is one of the smallest states in Mexico. It benefits from its close proximity to Mexico City and contains a number of economic and environmental assets in its territory. After a long period of economic stagnation, the state is now closing up the gap with national standards. Yet, productivity and income levels remain low with respect to national levels, and there exist high socio-economic disparities between the south of the state and the municipalities in the northern and mountainous area. This review looks at how the state of Hidalgo is seeking to boost its economy, particularly through a series of institutional reforms and policies to improve the business environment. It highlights opportunities to accelerate the economic convergence and transit towards high-value added economic sectors. The review also identifies a number of recommendations to promote inclusive growth and reduce its north-south divide and offers suggestions to address governance challenges in the territory.

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